Understanding unmet need for contraception in Uganda: A mixed methods study of contraceptive use among women and men

Amrita Namasivayam

MSc., MMed., BSc.(Hons)

A thesis submitted for the degree of

Doctor of Philosophy

at the University of Canterbury

Te Whare Wananga o Waitaha,

Christchurch, New Zealand.

29 February 2020

Primary supervisor: Dr Sarah Lovell

Co-supervisor: Professor Philip Schluter

ABSTRACT

Background

Unmet need for contraception, defined as the percentage of women who are sexually active and want to avoid, space or limit pregnancies, but are not using a method of contraception, stands at 28.4% of all married women in Uganda. An understanding of women's and men's contraceptive behaviours, and the motivations that drive these, are key to tackling unmet need, by way of designing, implementing and improving family planning programs to effectively meet the needs of different population groups.

This study sought to examine contraceptive use among women and men in Uganda, and identify strategies to strengthen contraceptive uptake in the Busoga region (chosen due to its low contraceptive prevalence of 31.3% and high unmet need of 36.5% among married women of reproductive age). The specific aims of the thesis were to analyse national data for population-level changes and predictors of contraceptive use among both women and men; understand the contextual and cultural enablers and barriers that affect contraceptive use among women in the Busoga region; explore in-depth men's perspectives on male involvement and/or partner opposition to contraceptive use in this region; and provide recommendations to better engage women and men in family planning discussions and initiatives, in order to ultimately improve contraceptive uptake.

Methods

An explanatory sequential mixed methods approach was employed in this study. The first phase comprised of two separate but related quantitative studies. Data from five Uganda Demographic and Health surveys (DHS) were first analysed for changes in contraceptive use among women and men across the years 1995-2016. Data from the most recent 2016 DHS were then used to identify current predictors of contraceptive use among women and men.

Informed by these findings, the qualitative phase comprised of focus group discussions (FGDs) with women and in-depth interviews with men in the Busoga region, to explore reasons for unmet need and low contraceptive uptake in this region, as well as to understand the drivers and challenges around contraceptive use.

Results

The analysis of Uganda DHS survey data across 21 years indicated an increase in contraceptive use over time, among both women and men. In 2016, 27.3% of women and 35.9% of men were using a modern method of contraception, an increase from 7.4% and 10.4%, respectively, in 1995. A steeper rate of increase in contraceptive use was also observed among certain sub-populations, such women who were less educated, those living in rural areas, and men; however, overall contraceptive uptake among these groups remained well below their more educated, urban, and female counterparts, respectively. Significant country-level predictors of contraceptive use among women included education, parity, marital status, wealth index, region of residence and distance to healthcare services. For men, education, number of children, wealth index, hearing about family planning through the media and discussions about family planning with a health worker were significantly associated with contraceptive use.

Thematic analyses of data from FGDs with women and interviews with men highlighted the complex, multi-level nature of contributors to unmet need, and women's and men's use of contraception in the Busoga region. Within a largely patriarchal society, women had to navigate many obstacles; some of these included fears about contraceptive side effects; partner opposition, community beliefs and stigma that dissuaded contraceptive use, traditional gender and socio-cultural norms that dictated women's fertility choices; service delivery limitations; and difficulties with contraceptive access due to unavailability, costs or distance. Among men, views on contraception were mixed. The majority of male respondents were opposed to contraceptive use because they wanted more children, or were fearful of or inconvenienced by

contraceptive side effects that affected their partner. Most men were not in favour of the male contraceptive methods available to them; condom use was largely perceived to be for casual relationships outside one's marriage, or as protection against sexually transmitted infections (STIs)/human immunodeficiency virus (HIV) infections, while the implications of vasectomy on men's virility were too drastic for them to consider it a viable contraceptive option. Men's views on family size and gender roles were largely shaped by patriarchal values of Ugandan society, which determined their own notions of male identity, masculinity and social status. These perspectives also influenced their views of women's roles in a marriage, family and society, as well as their ideas around male involvement in family planning.

Conclusions

The results of this mixed methods study point to increases in contraceptive use in Uganda, particularly among men, and less educated, rural populations, which likely reflect the success of family planning programs and policy directives in recent years. Yet despite these successes, much work remains to be done in addressing multiple barriers to contraceptive use that still exist. The findings suggest that increasing male acceptance of contraception, rather than involvement, may be more effective in enabling women's contraceptive use. Recognising the gender norms and patriarchal traditions that dictate contraceptive decisions and behaviours is important in efforts around promoting communication and joint decision-making around fertility choices and regulation among couples. Changing community narratives about family planning through testimonies from satisfied users may be effective in allaying some of the fears that remain associated with contraceptive use. Finally, improving family planning service delivery through increased provider training and better side effects management, as well as scaling up the community-based distribution model of service provision, could make contraceptives more accessible to women in Uganda.

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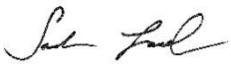
Name: *Sarah Lovell* Signature:  Date: *28/02/2020*

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ACKNOWLEDGEMENTS

In completing this thesis, I owe a debt of gratitude to many people.

I would first like to thank my primary supervisor, Dr Sarah Lovell, and my co-supervisor Professor Philip Schluter, for being the brilliant minds that supported me throughout this journey. Both of you have been integral to the quality and completion of this thesis, and I could not have asked for a better supervisory team to have on my side.

Sarah, your diligence, wit, patience and steadfast guidance has been invaluable to the outcome of this research. As a supervisor, you struck a perfect balance between firmly steering me in the right direction, continually motivating me when I was unsure of what I was doing, and never questioning my ownership and decisions about the project; for that I am beyond grateful. It has been an honour to have learnt from and worked with you, and am indebted to your commitment and acumen in supervising this project. Our many conversations about cultural nuances and the qualitative data remain close to my heart, as do the memories from surviving the IMGS adventure together.

Philip, it has been a privilege to have had your wisdom, mentorship and enthusiasm in this project, not to mention your attention to detail. I could not have managed these years without your humour and kindness, both intellectually and personally. The long hours we spent staring at the 'matrix' of numbers on the screen for the quantitative studies, labouring over sentences and words in the manuscripts and drinking too much coffee while randomly talking about horses and running are some of my fondest memories. Thank you for always nudging me to be better, and for making sure I took care of myself.

To the warm and gracious people of Iganga, who made my research and fieldwork in Uganda possible. Sarah Namutamba, thank you for your energy, determination and tirelessness in the field, and for your cheerful disposition with everything that you did for the project. To the staff

of Wellshare International, Marie Stopes International and Uganda Development and Health Associates, thank you for your advice and guidance, and for readily assisting with the logistics and transport for my fieldwork. To Esther, Susan, Good Luck, Beatrice, Dr. Andrew, Sumaya, Ezekiel, Michael, Tinah, Vivian, George, Joan, Robert, Laurence, Victoria, Amiri, Henry and Musa, thank you for sharing your lives with me, and for your generosity and laughter. To Aisha and the children: Naajah, Mercy, Timothy, Ed, Nadia, Shadia, Hadijah and Caroline, thank you for looking after me in your home. This project would not have been possible without all of you going the extra mile to make sure I was safe, comfortable, and taken care of. To all my research participants, who spent so much of their time sharing their stories with me, I hope I have done justice to your experiences, and that this project, in some way, touches your lives.

To the University of Canterbury (UC), for granting me the UC Doctoral scholarship that made the opportunity to pursue this PhD possible. To the School of Health Sciences, for the conference grants and funds that enabled the fieldwork, papers and conference presentations for this PhD. To the UC Library Open Access fund, for the financial support of the publications that are part of this thesis. To Professor Ann Richardson, for being my first point of contact at UC, the examiner in my doctoral confirmation and our doctoral student coordinator during my time at UC. To Kirsty Fraser, who always made sure that I was comfortable at Rehua and handled all my claims, requests and administrative queries. To Nick Scullin and Margaret Paterson, who calmly sat with me through the fraught times of merging chapters and editing references, while EndNote and MS Word crashed on me multiple times. To the instructors at the UC RecCentre: Kirsty, Elfy, June, Sabine, Simone, Kat and others, for providing much needed balance for my mental and physical health during these years at UC.

Lisa and Sam, you have been pillars of strength and my closest friends here in New Zealand. Amidst the coffee and laughs and wine and tears and random adventures, you have both been the shoulders I leaned on the most, and I thank you for being there for me through and through.

To my PhD *whānau* from Waimairi 108: Gökçe, Sarah WD, Kelly, Neville and Jenna, thank you for being such wonderful companions along the way. Sarah, you have been with me to the very end, and our stress relief sessions sharing cuppas was much needed reassurance that I was not alone in this. My PhD colleagues from Manawa and Rehua 230: Teariki, Alice, Emma and Charles; and my friends in New Zealand: Maria, Stephanie, Sergio, Nellie, Jessica, Prabodhini, Jo, Danielle, Adriana, Vicky and the PGSA 2019 exec; thank you for your friendship along the way. To my *whānau* in Singapore, Sweden, Sri Lanka and everywhere else: Nipuna, Judith, Peklyn, Patrick, Anushka, Erika, Charisse, Zaake, Germán, Mr Kong, Vanitha, Vasuki, Jesse, Foo Sek Hin, Thevs, May, Sidra, Emily, Nadia, Karish, Asela, Buddhi, aunt Nalini and Kantha, thank you for staying in my life and being there across the miles and time zones. Nisha, I wish you had not left us so early in life, and that you could have celebrated the completion of this milestone with me. I know you would be proud.

Last but not least, I owe a huge amount of gratitude to my family. Mum, thank you for always encouraging and believing in me, and being my strongest supporter. Your faith in me has never wavered, and you stood by me resolutely all the way. This project could not have happened without your will and gentle reassurance. Dad, my intellectual kindred spirit; though you weren't too keen on me travelling alone to Uganda so often, I appreciate your humour, love and encouragement as a fellow worrier and PhD holder. Thank you for our long and funny chats, and emails you've sent over the years to keep me going. Prav, *hermano*, thank you for constantly being my rock, despite the 12-hour time difference between us. Your wisecracks, musical distractions, Terry Pratchett wisdom and surprisingly good editing skills have been a source of joy and laughter through these times. I could not have done this without all of you.

DEDICATION

To the women of Uganda, the quiet, resilient warriors

who re-taught me the meaning of happiness, with utmost grace and vivacity.

And to Mum, Dad and Prav, for anchoring me, always.

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Namasivayam, A., Lovell, S., Namutamba, S., & Schluter, P. J. (2020). Predictors of modern contraceptive use among women and men in Uganda: A population-level analysis. *BMJ Open, 10*, e034675. https://doi.org/10.1136/bmjopen-2019-034675

Reports

Namasivayam, A., Lovell, S., & Schluter, P. (2018). Topline findings on contraceptive use in the Iganda and Luuka districts of Uganda. School of Health Sciences, University of Canterbury. New Zealand.

Conference presentations:

Namasivayam A., Schluter P.J., Lovell S. (2019) Male involvement in contraception in the Busoga region of Uganda: A qualitative study. Oral presentation at the IUHPE World Conference on Health Promotion, Rotorua, New Zealand.

Namasivayam A., Schluter P.J., Lovell S. (2019) Addressing the unmet need for contraception in Uganda: Key informants' perspectives on contraceptive service provision in the Busoga region. Oral presentation at the IUHPE World Conference on Health Promotion, Rotorua, New Zealand.

Namasivayam A., Lovell S., Schluter P.J. (2018) Improved contraceptive use among women and men in Uganda: A repeated cross-sectional population study for the years 1995-2016. Flash presentation at the International Conference on Family Planning, Kigali, Rwanda.

Namasivayam A., Lovell S., Schluter P.J. (2018) Men's perspectives on contraception in the Busoga region of Uganda: A qualitative study. Poster presentation at the International Conference on Family Planning, Kigali, Rwanda.

LIST OF ABBREVIATIONS

AIDS	Acquired immune deficiency syndrome
AFP	Advance Family Planning
AOR	Adjusted odds ratio
AUC	Area under the curve
CBD	Community-based distribution
CI	Confidence interval
DHS	Demographic and Health Surveys
EA	Enumeration areas
EC	Emergency contraception
FGD	Focus group discussion
FP	Family planning
FP2020	Family Planning 2020
FPAU	Family Planning Association of Uganda
FP-CIP	Family Planning Costed Implementation Plan
GDP	Gross domestic product
HC	Health centre
HCWs	Healthcare workers
HIV	Human immunodeficiency virus
HSD	Health sub-district
IMB	Information-motivation-behavioural skills
IRB	Institutional Review Board
IUD	Intrauterine device
KAP	Knowledge-awareness-practice
LAM	Lactational amenorrhea
MDGs	Millennium Development Goals
MMR	Maternal mortality ratio
MOH	Ministry of Health
OR	Odds ratio

PNFP	Private not-for-profit
RHU	Reproductive Health Uganda
ROC	Receiver operating characteristic
SDGs	Sustainable Development Goals
SSA	sub-Saharan Africa
STIs	Sexually transmitted infections
TCMP	Traditional and Complementary Medicine Practitioners
UC	University of Canterbury
UNFPA	United Nations Population Fund
USA	United States of America
USAID	United States Agency for International Development
VHT	Village health team
WHO	World Health Organization

GLOSSARY/TERMINOLOGY

whānau	New Zealand Te Reo Māori word for extended family.
koha	New Zealand Māori custom of giving a gift/donation.
mzungu	East African Bantu/Luganda term for ‘white person’ or foreigner.
boda	Lusoga term for motorcycle taxi.

1 INTRODUCTION AND BACKGROUND

1.1 A GLOBAL SNAPSHOT OF MATERNAL HEALTH

"Mrs. X found herself at the entrance to the 'Maternal Death Road' by the socioeconomic condition of the community in which she lived, and by her status within that community. Poor socioeconomic conditions can account for a mortality differential, even in developed countries. However, this is not what is making maternal mortality the world tragedy that it is today […] *The status of women in the society makes more of a difference. When women are denied their rightful status, they become more socially disadvantaged - the poorest of the poor. As a child, she will be denied whatever education her brother will have. She will be the last to feed from the limited family pot. She will not receive the same level of care in case of illness. These would be the woman's first steps along the maternal death road* […]

Her next steps would lead her into a society-imposed excessive fertility. It was her only acknowledged contribution to society. Children were the only goods she could deliver, and her status as a woman depended on her role as a mother. Each time she got pregnant, Mrs X faced the risk of being pushed further along the road, and her cumulative risk increased. Her pregnancies will be too early, too close, too many and will continue for too late. Her reproductive life is governed by chance and not by choice. Even if she wanted to take control, access will be denied. If women who wanted no more children were allowed to do so, maternal mortality in many countries would be decreased by about one third."

[Excerpt from the animated film titled 'Why did Mrs X die?, produced by the World Health Organization in 1988. Available at: www.youtube.com/watch?v=gS7fCvCIe1k&t=3s]

Maternal health has conventionally been defined as encompassing all issues around the health of a woman before, during and after pregnancy and childbirth (Ronsmans & Graham, 2006). A maternal death is therefore defined as "the death of a woman while pregnant, within 42 days of the termination of a pregnancy, from any cause related to or worsened by the pregnancy or its management but not from accidental or incidental causes" (World Health Organization, 2019, p. 1), while maternal morbidity is defined as "any health condition attributed to and/or aggravated by pregnancy and childbirth that has a negative impact on the woman's wellbeing" (Firoz et al., 2013, p. 795).

Maternal health has come a long way since the 1980s, when the story of Mrs. X was first discussed by Professor Mahmoud Fathalla as part of the Safe Motherhood movement (Fathalla, 1987). Issues around women's health, reproductive rights, gender equality and women's empowerment have been championed across the globe, largely shaped by landmark movements such as the International Conference on Population and Development in Cairo, Egypt (1994), the Beijing Declaration and Platform for Action (1995), the Millennium Development Goals (MDGs) and the subsequent Sustainable Development Goals (SDGs). These initiatives have each called individual countries to action and demanded national and regional accountability for reducing the burden of maternal deaths (Haslegrave, 2013).

As a result of these advances, there has been a decline in the global maternal mortality ratio (MMR) from 380 to 216 per 100,000 live births between the years 2000 and 2015 (World Health Organization, 2016c). Yet current figures from the World Health Organization (WHO) estimate that in 2017, approximately 295,000 women died during pregnancy and childbirth, which amounts to a staggering 810 deaths every day (The World Bank, 2019a). The majority (94%) of these maternal deaths occurred in low-resource settings, and were from preventable or treatable causes such as bleeding, infections, pre-eclampsia and eclampsia, complications during delivery and unsafe abortions; many of the same health risks that Mrs. X faced on the

maternal death road. South Asia and sub-Saharan Africa (SSA) accounted for approximately 86% (254,000) of these maternal deaths, with two-thirds of the deaths in SSA; a majority of these deaths were due to a lack of access to contraception, skilled care and emergency services during and immediately after childbirth (World Health Organization, 2005, 2007a). Women of low socioeconomic status living in rural and remote areas are often the least likely to be able to access care; this is further compounded by a shortage of skilled healthcare workers (HCWs) in these settings. Additionally, a lack of information or awareness about health, as well as geographical, financial, gender and cultural barriers pose further challenges to healthcare accessibility (Filippi et al., 2006).

1.2 AN OVERVIEW OF CONTRACEPTION

Contraception, or family planning is a key facet of sexual and reproductive health, and allows for women and couples to choose if and when to have children, by way of delaying, spacing or limiting pregnancies (World Health Organization, 2018a). Contraceptive use is a cost-effective public health intervention that is crucial to averting maternal deaths that result from high-risk and/or unintended pregnancies, and unsafe abortions (Cleland, Conde-Agudelo, Peterson, Ross, & Tsui, 2012; Mwaikambo, Speizer, Schurmann, Morgan, & Fikree, 2011). Unsafe abortions alone account for between 4.7-13.2% of maternal deaths every year (Say et al., 2014). Modern contraceptive use has increased in many parts of the world, from 54% of all women of reproductive age in 1990, to 57.4% in 2015; yet in certain regions, including SSA, contraceptive prevalence rates remain very low (28.5% of all women of reproductive age) (World Health Organization, 2018b). Despite the successes and advances thus far, there remain a plethora of gaps and challenges that need to be overcome, as evident from the millions of

women who are not able to use or access the contraceptive services they need (Singh & Darroch, 2012; United Nations Population Fund, 2017).

Access to and use of contraception by women can improve the health, economic and social domains of their lives (Singh & Darroch, 2012). Spacing or limiting pregnancies allows for better health of the mother and her child/children, better financial management of smaller families, less time spent on child care and more opportunities for women to seek employment, financial independence and empowerment (Smith, 2012). Delayed childbearing, particularly among girls aged 15-19 years, increases the likelihood of education completion and improved employment prospects, together with better health outcomes from avoiding the risks and complications of early pregnancies. Girls and women are subsequently able to care for and manage smaller, healthier families more effectively (Mills, Bos, & Suzuki, 2010).

Contraceptive use, particularly pertaining to barrier methods, is also fundamental to preventing the transmission of sexually transmitted infections (STIs) and the human immunodeficiency virus (HIV). Women are particularly vulnerable to HIV infections due to their physiology and factors such as lack of empowerment and equity, violence as well as gender norms that allow men to have more than one sexual partner, and to be sexually active with much younger women (Bingenheimer, 2010; Mills et al., 2010). In SSA alone, 60% of the people living with HIV or acquired immune deficiency syndrome (AIDS) are women, and those between the ages of 15-24 years are 3.4 times more likely to be infected than a man of the same age (Vijayakumar et al., 2006; Wadhams, 2009).

Contraceptive methods are broadly classified as modern methods, and traditional/folkloric methods. Modern contraceptive methods include oral contraceptive pills, implants, injectables, intrauterine devices (IUDs), condoms (male and female), sterilization (vasectomy for men, tubal ligation for women), emergency contraceptive (EC) pills, diaphragms, cervical caps,

vaginal rings, sponges, spermicidal agents (foams, creams, gels) and patches. Traditional contraceptive methods refer to fertility awareness methods (standard days method, Billings ovulation method, calendar rhythm method, symptothermal method, two-day method, the use of devices such as moonbeads to predict fertile periods), abstinence and withdrawal (World Health Organization, 2018b). Lactational amenorrhea (LAM), or breastfeeding, is considered a modern contraceptive method by the WHO and the Demographic and Health Surveys (DHS), while other groups such as the United Nations Population Fund (UNFPA) and the Guttmacher Institute classify it to be a traditional method (Hubacher & Trussell, 2015). Folkloric methods of contraception are employed by traditional healers in various contexts, and refer to the use of local medicines, herbs, and charms (Rossier & Corker, 2017).

Contraception remains a key focus on the global agenda for maternal health. Landmark events such as the London Summit on Family Planning in 2012, the International Conference on Family Planning in 2013, 2016 and 2018, and initiatives such as Family Planning 2020 (FP2020) have advocated for the importance of family planning as a tool to enhance the health, wellbeing and empowerment of women. The next section briefly describes some of these advocacy efforts.

1.2.1 The Millennium Development Goals (MDGs)

The MDGs were a set of eight goals conceptualised to reduce poverty in different focal areas, through addressing hunger, education and illiteracy, disease (particularly malaria, tuberculosis and HIV/AIDs), discrimination against women (in economic, health and equality domains) and environmental harm, among others (World Health Organization, 2015a). These goals were agreed upon by 189 countries in the year 2000, through their signing of the United Nations Millennium Declaration (Sachs & McArthur, 2005; United Nations, 2015). Goal #5 in

particular focused on maternal health and mortality, and had the specific targets of reducing the MMR by three quarters between 1990 and 2015 (MDG5a), and achieving universal access to reproductive health by 2015 (MDG5b) (World Health Organization, 2015b).

While many low and middle-income countries made commendable progress in achieving MDG5, particularly in reducing their MMRs, most country targets were not achieved by the year 2015. Universal access to reproductive healthcare for *all* women continues to remain a challenge, particularly among marginalised, vulnerable and at-risk populations. In recognition of the limited inroads made by the MDGs, the SDGs have been reframed to continue to advocate for reproductive health to be integrated into national programmes and strategies (United Nations, 2016b).

1.2.2 The Sustainable Development Goals (SDGs)

Continuing on from 2015, the SDGs were conceptualised with more specific targets and objectives, with the aim of building on the foundation and achievements of the MDGs and continuing progress in these domains, with a similar goal of ending poverty. Totalling 17 in number compared to the eight MDGs, the SDGs also include new areas of focus such as economic inequality, climate change, peace and justice and innovation, among others (United Nations, 2016b). The interconnectedness of the multiple targets under each goal require that common underlying issues – such as education, economic empowerment and discrimination – be concurrently addressed if success in any one of the goals is to be achieved.

Of the SDGs, SDG #3 focuses on the health and wellbeing of populations, while SGD#5 addresses gender equality. With regard to maternal health specifically, target 3.1 is to "reduce the global maternal mortality ratio to less than 70 per 100 000 live births by 2030", while targets 3.7 and 5.6 are to "ensure universal access to sexual and reproductive health care services,

including family planning, by 2030", and to "ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action", respectively (United Nations, 2016b, p. 1).

The SDGs have come under criticism for some of the more contradictory goals, particularly those around socioeconomic development, climate action and environmental sustainability. Critics have also pointed out the difficulties in quantifying and monitoring progress of the goals in different countries due to their broad and non-binding nature (Swain, 2017). To date, progress on the SDG targets focused on gender quality, health and wellbeing has been slow but steady, with sustained investment in efforts to improve maternal health. As mentioned in section 1.1 however, maternal mortality remains a problem in many low and middle-income countries, and in the SSA region in particular.

1.2.3 Family Planning 2020 (FP2020)

The FP2020 initiative was a direct outcome of the London Summit on Family Planning in 2012 (United Nations Foundation, 2015). At the summit, several countries came together to discuss women's and girls' universal access to sexual and reproductive health services and reproductive health rights by 2030, in line with the objective of SDGs #3 and #5. More than 20 countries then pledged a commitment to address financing, policy, service provision and socio-cultural barriers that women and girls face when using and/or accessing contraceptive information, products and services. This number has since grown to 36 countries in subsequent FP2020 meetings (Dockalova, Lau, Barclay, & Marshall, 2016).

The overarching goal of FP2020 is to "expand access to family planning information, services, and supplies to an additional 120 million women and girls in 69 of the world's poorest countries

by 2020" (FP2020, 2019, p. 1). The goal is based on the principle that all women and girls should have access to contraceptives, regardless of where they live, their financial circumstances and stage of reproductive life; and they should have the right to decide for themselves if and when they want to have children, and how many. At the time of conception, the main stakeholders involved were the Bill & Melinda Gates Foundation, the UNFPA, the government of the United Kingdom in collaboration with other national governments, members of civil society donor organizations, the global research community and private sector. Since then, FP2020 continues to maintain a results-oriented, inclusive partnership with a diverse group of stakeholders, and provides a platform for accountability and work towards achieving universal access to contraception across the countries that still struggle with issues relating to this (Dockalova et al., 2016). The FP2020 initiative works around the four main tenets of promoting support at the country level for different country-specific programs and contexts; advocating for the use of data and performance management; focusing on global advocacy through a rights-based approach; engaging and involving youth; and lastly, promoting the sharing of knowledge, evidence and best-practices. The main focal areas proposed at the summit in 2012 continue as the foundation of many initiatives; these include "increasing the demand and support for family planning; improving supply chains, systems and service delivery models; procuring additional commodities that some countries need to reach their goals; fostering innovative approaches to family planning challenges; and promoting accountability through improved monitoring and evaluation" (FP2020, 2019, p. 2).

In the most recent progress report for the years 2018-2019, FP2020 reported an increase in the number of modern contraceptive users by 53 million since the FP2020 initiative began in 2012. The report also highlighted that nine of the 36 countries were on track to meeting their targets, with another 13 countries falling a few percentage points short. Furthermore, since 2012, modern contraceptive prevalence rates have shown an increase of more than two percent across

FP2020 focal countries, with the highest increase of seven percent occurring in the east and southern regions of Africa (FP2020, 2019).

1.3 UNMET NEED FOR CONTRACEPTION

Unmet need for contraception is defined by the WHO as the percentage of women 'who are sexually active and of reproductive age, either married or in a union, who want to avoid, space or delay childbearing but are not using any method of contraception (World Health Organization, 2016b). In 2019, 270 million women of reproductive age had an unmet need for contraception, mainly in low-income countries (Kantorová, Wheldon, Ueffing, & Dasgupta, 2020). In past decades, unmet need was defined as a KAP (knowledge of, attitudes toward and practice of birth control) gap, in reference to the discrepancy between women's reproductive preferences and birth control practices (Bongaarts, 1991). This definition had limitations, however, as the KAP gap did not account for women who had a need for spacing, or women who were infecund or pregnant and therefore did not use contraception. Current definitions of unmet need omit pregnant, infecund and menopausal women from the calculation, and recognize both unmet need for spacing (women who want to delay their next pregnancy) and unmet need for limiting (women who do not want any more children) (Cleland, Harbison, & Shah, 2014). The WHO recommends an optimal spacing of at least 24 months between pregnancies to reduce the risk of adverse maternal, perinatal and infant outcomes, though for many women this is not a possibility due to an unmet need for contraception (World Health Organization, 2007b). Figure 1.1 depicts the different contraceptive needs of women at different stages of their life, and the ways in which unmet need for contraception is categorized (Khan, Bradley, Fishel, & Mishra, 2008).

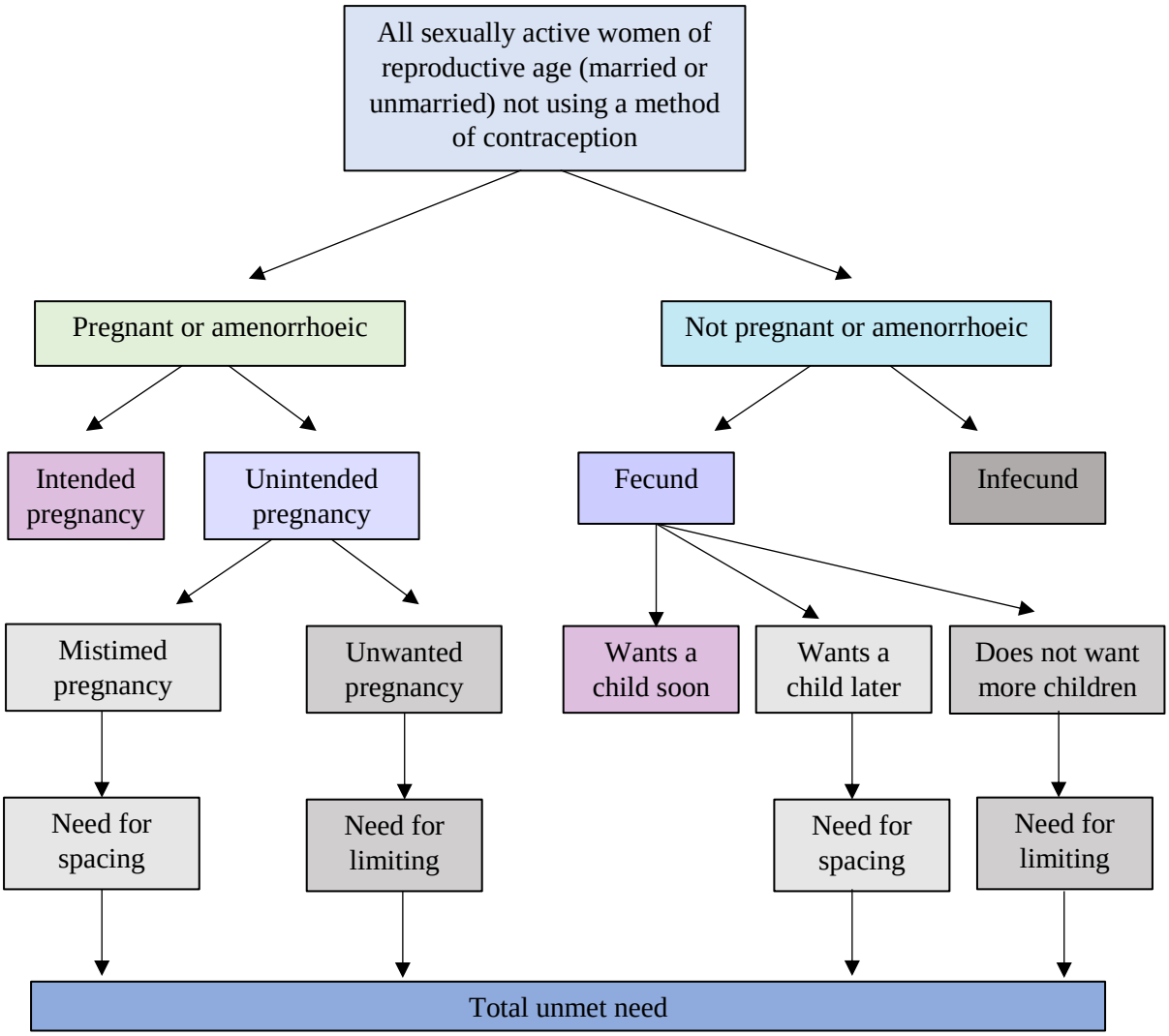

Figure 1.1. Definition of unmet need for contraception, including unmet need for spacing/limiting pregnancies (Khan et al., 2008)

One of the primary tools that have been used to measure women's unmet need across time and in different countries is the DHS (Ashford, 2003; Westoff, 2006). As part of the DHS methodology, standardized women's questionnaires are employed to collect data from a representative sample of women of reproductive age (15-49 years) on a number of indicators around fertility intentions and contraceptive use. Women's responses are then used to calculate unmet need, differentiating between an unmet need for spacing and an unmet need for limiting (Ashford, 2003; MEASURE Evaluation, 2016). Estimates of unmet need, together with contraceptive prevalence rates provide a snapshot of total contraceptive demand in a country,

and quantify how much of that demand is being met by current service provision. While this is a useful measure, it should be recognized that contraceptive prevalence rates are a product of many variables, including access to family planning information and services, the availability of contraceptive methods and skilled staff, and a multitude of social and cultural enabling factors and barriers (Ministry of Health Uganda, 2014). These will be described in more detail in subsequent sections.

One critique of using measures of unmet need and contraceptive prevalence rates has been the measures' inability to identify women who are using a contraceptive method ineffectively or unsatisfactorily, as this is a population sub-group that do not have their contraceptive needs met completely, but are excluded from calculations of unmet need (Ashford, 2003). Yet unmet need has remained a benchmark measure of contraceptive demand both for policy purposes and program monitoring and evaluation, and continues to be an important indicator of women's ability to achieve their fertility intentions.

In their seminal paper on the causes of unmet need, Bongaarts and Bruce (1995) cite a lack of knowledge about contraception, cost, religious beliefs, unavailability of methods, fears of side effects, and social barriers such as partner opposition and family disapproval of contraception as contributors to unmet need. Though the study was published 25 years ago, some of these reasons still persist as the root cause of unmet need today. Moreover, contributing factors to unmet need are multi-dimensional and vary greatly among cultures, contexts and communities, and women in different settings can often be faced with more than one cause of unmet need (Ashford, 2003; Hailemariam & Haddis, 2011; Stephenson, Baschieri, Clements, Hennink, & Madise, 2007). A common misconception is also that unmet need equates to lack of access to contraception, which is not always the case; in many instances women are able to access contraceptives but choose not to, citing some of the reasons mentioned above.

Based on frameworks that have looked at fertility transitions in a European context, Cleland and colleagues (2011) proposed the idea that couples need to be 'ready, willing and able' to use modern contraception. As women and men may have different fertility preferences and could be at different stages of readiness and willingness to use a contraceptive method, it is paramount to acknowledge the importance of these factors from a couple's standpoint, and their interactions in determining contraceptive use (Cleland, Ndugwa, & Zulu, 2011). Ability to use a contraceptive method is also tied to factors such as knowledge, accessibility and agency in seeking out contraceptive services (Cleland et al., 2014).

In the early 1990s, it was already recognised that the quality of family planning service provision was often a neglected aspect in community-based reproductive health programs. At the time Bruce (1990) put forward the Quality of Care framework, which outlined six elements of 'quality' from the client's perspective that should be factored into family planning services:

- *Choice of methods* - the number and variety of contraceptive options offered to clients, taking into account their demographic and health profiles as well as their contraceptive intentions at a given point in time, and the possibility of changing contraceptive needs over time.
- *Information given to clients* - the information provided during consultation with a health service provider that allows for clients to make an informed choice about the contraceptive option best suited for themselves. This includes information on the different contraceptive options available, potential side effects and contraindications, ways to best use the method and avenues for follow-up, re-supply and/or referral (usually for long-term methods).
- *Technical competence* - the extent to which protocols are followed for quality service provision, client confidentiality and clinical safety and hygiene standards (for implants, IUD insertion and sterilization)

- *Interpersonal relations* - the availability of professional client-provider relationships that enable appropriate contraceptive service provision. This includes factors at the health system level such as adequate staffing and resources allocation, as well as the management and work culture at the point of family planning service delivery.
- *Follow-up and continuity mechanisms*- the establishment of appropriate channels to enable continuity with a chosen contraceptive method, either through provision of information and services for self-management, or formal follow-up options for side effects management or method switching with a healthcare provider.
- *Appropriate constellation of services* - the availability and provision of family planning services that are accessible and acceptable for clients, for instance through integration with larger maternal and child health programs, or community-based reproductive health programs.

Taking the above factors into account, addressing unmet need therefore requires a two-pronged approach that recognises the different contextual facets of contraceptive demand and reconciles these with adequate, accessible and acceptable provision of family planning services (Cleland et al., 2014). Educating women, men and couples on the importance of safe sex practices and family planning to align with changing attitudes towards fertility preferences and family size is crucial to achieving success and sustainability in such services (Mwaikambo et al., 2011). Equally important is empowering women to make choices regarding their reproductive health and ensuring that they have a supportive and conducive environment in which they are able to do so (Do & Kurimoto, 2012; Yaya, Uthman, Ekholuenetale, & Bishwajit, 2018). It is critical then that reproductive health programs and contraceptive service providers take these factors into account in ensuring the availability, accessibility, affordability, and acceptability of contraceptive options for women and men (Adams, Salazar, & Lundgren, 2013; Kabagenyi,

Reid, Ntozi, & Atuyambe, 2016; Muhindo, Okonya, Groves, & Chenault, 2015; Nalwadda, Mirembe, Byamugisha, & Faxelid, 2010; Paek, Lee, Salmon, & Witte, 2008).

1.3.1 Fertility transitions and family planning in the African continent

Though maternal health and contraceptive uptake have seen improvements across the African continent over the last few decades, maternal mortality and unmet need for contraception still continue to be serious public health concerns in this region of the world. Initial records of fertility rates on the African continent date back to the early 1960s, when the first censuses indicated unsustainably high rates of population growth in many countries (Garenne, 2018). It was around the same period, and extending into the 1970s, that family planning programs were initially set up across the continent as a response to these trends (Sharan, Ahmed, May, & Soucat, 2011). Fertility rates however continued to increase between 1950 and 1980, spurred by improvements in sanitation and the control of infectious diseases and STIs. Urban-rural disparities did exist, with fertility increases being more pronounced in rural areas and fertility declines (largely as a result of contraceptive use) occurring later in urban areas (Garenne, 2018).

While acknowledging the vast differences in countries, contexts and cultures across the African continent, and the different rates at which demographic and fertility transitions have occurred in different countries, total fertility rates and projections for population growth in the continent remain among the highest in the world today (Cleland et al., 2011). The onset of the demographic and fertility transitions across Africa have also been much later compared to other regions in the world such as South Asia and Latin America (Caldwell & Caldwell, 2002; Cleland et al., 2014). Though contraceptive uptake rates have shown an overall increase over time, countries in west Africa, for example, have shown much slower increases compared to

the eastern African countries (Cleland et al., 2011; Shah, Griffith, Ciera, Zulu, & Palermo, 2015). Cultural and traditional practices that support high fertility, shun barrenness and hold children in high regard in terms of economy, inheritance and legacy have impeded the acceptance and uptake of contraception in favour of large families comprising of several wives and children (Caldwell & Caldwell, 2002). Coupled with high infant and child mortality rates in earlier decades, as well as famine, civil wars and conflicts and the HIV/AIDs epidemic, having many children has provided a sense of security and ensured survival of families in times of crisis (Ahmed et al., 2019; Defo, 1998; Lindstrom & Kiros, 2007; Urdal & Che, 2013).

Poorly controlled increases in population growth are concerning in light of diminishing resources, and health and economic development goals in many African countries today (Cleland et al., 2011). While contraceptive demand remains low, particularly in the western Africa region, other countries have a high demand for contraceptives but also high levels of unmet need. The push for increased modern contraceptive uptake has been spurred on by the MDGs, SDGs, FP2020 goals and individual country commitments to ensuring accessible contraception and sexual and reproductive health services. Though many governments are in favour of family planning service provision, sustained and sufficient funding for these initiatives remains a challenge, particularly when program funding is tied to external donors for limited amounts of time (Caldwell & Caldwell, 2002). Furthermore, as described earlier, unmet need is driven by a multitude of factors: awareness, availability, affordability, accessibility, and acceptability of contraceptive services are key considerations. Contextual factors such as community attitudes, partner opposition and traditional, patriarchal and socio-cultural norms and gender roles are also important in determining contraceptive behaviour and choice (Stephenson et al., 2007).

In the east African region, the total fertility rate remains high for many countries (4.6 children per woman in Kenya and Rwanda, 5.4 in Tanzania, 5.4 in Uganda, and 6.4 in Burundi). Modern

contraceptive prevalence in the region is relatively low but with a wide range of disparity (from 17.7% in Burundi to 45.1% in Rwanda) and levels of unmet need generally remain higher than contraceptive prevalence rates (Ministry of Health Uganda, 2014). Data from DHS reports for these countries indicate that injections and oral pills are the most popular contraceptive methods, with low utilisation rates of IUDs, implants and condoms (Ministry of Health Uganda, 2014).

Uganda is one of the several countries in SSA with high maternal mortality and unmet need for contraception. In 2015, the MMR in Uganda stood at 343 deaths per 100,000 live births (The World Bank, 2015). While this figure is declining as a result of significant improvements to maternal healthcare, it fell short of Uganda's MDG5 target of 131 deaths per 100,000 live births (Ministry of Finance and Economic Development, 2015). In 2016, unmet need for contraception stood at 28.4% of married Ugandan women of reproductive age, higher than most other countries in the east African region (22.1% in Tanzania (2015-2016); 18.9% in Rwanda (2014-2015); 17.5% in Kenya (2014)) (Kenya National Bureau of Statistics, Ministry of Health Kenya, National AIDS Control Council Kenya, Kenya Medical Research Institute, & National Council for Population Development Kenya, 2015; Ministry of Health Tanzania, 2016; National Institute of Statistics Rwanda, 2016; Uganda Bureau of Statistics, 2018).

The Ugandan government however, recognizes that family planning is central to economic development. The most recent initiative by the Ministry of Health in this area is the Uganda Family Planning Costed Implementation Plan 2015-2020 (FP-CIP), which seeks to reduce "unmet need for family planning to 10% and to increase the modern contraceptive prevalence rate to 50% by 2020" (Ministry of Health Uganda, 2014, p. 1). The Uganda FP-CIP is described in more detail in section 2.4.2.2.

1.4 PURPOSE OF THIS THESIS

The objective of this study is to understand unmet need for contraception in Uganda, and identify strategies to strengthen contraceptive use among women and men of reproductive age. The first phase aims to examine changes in contraceptive use over time, and assess contextual and cultural determinants of women's and men's contraceptive use. Building on these findings, the thesis will then explore the more pertinent barriers to contraceptive use to understand how these affect contraceptive decisions and behaviour. Based on the outcomes of the study, recommendations will be provided for family planning service delivery organizations and key stakeholders to address and incorporate in future initiatives.

Using a mixed-methods design, the specific **aims** of this study are to:

1) Analyse national data for population-level changes in contraceptive use among women and men in Uganda for the years 1995-2016;
2) Identify current predictors of contraceptive use among both women and men based on data from the latest 2016 Uganda DHS;
3) Understand contextual and cultural enablers and barriers that influence contraceptive use among women aged 18-49 years in two communities in the Busoga region of east Uganda, where unmet need is high;
4) Explore in-depth men's perspectives on the topics of male involvement and/or partner opposition to contraceptive use in these communities; and
5) Provide recommendations and strategies to better engage women and men family planning discussions, decisions and programs, with the long-term goal of improving contraceptive uptake.

The **research questions** that frame the thesis are as follows:

a) How has contraceptive use among women and men in Uganda changed over time?
b) What are the current predictors of contraceptive use among men and women of reproductive age in Uganda, at the country level?
c) What are the factors and/or barriers that affect the contraceptive use by women aged 18-49 years in the Iganga (urban) and Luuka (rural) districts of the Busoga region?
d) How does male involvement affect contraceptive use in these communities?
e) How can the findings from (c) and (d) enhance the design and acceptability of strategies to increase contraceptive use in the Busoga region?

1.5 THESIS STRUCTURE

This thesis comprises of nine chapters. In Chapter One, I attempt to set the scene and provide a broader context within which my research is situated. Global trends in maternal health and contraceptive use have been described, highlighting some of the successes thus far and challenges that remain. A more contextualised description of maternal health and family planning in the African continent then follows, leading to the research questions and objectives which motivate this thesis.

In Chapter Two I provide a more detailed examination and review of the literature around contraceptive use in Uganda. The chapter describes the country context and health system of Uganda, as well as providing an account of maternal health and the unmet need for contraception in the country. A review of existing literature around contributors to unmet need is presented, followed by a description of the conceptual framework used to guide the research directions of this thesis.

In Chapter Three I describe the methodology, theoretical assumptions and methods that were employed in addressing the research questions in this thesis. A justification for a mixed methods approach is outlined, together with an account of pragmatism and feminism as epistemological foundations for the lens I use in conducting this research. The chapter also describes the ethics process and considerations of trustworthiness, reflexivity and rigour employed in the thesis.

Chapters Four to Seven focus on the results of the study. Chapter Four presents the results of the first quantitative study of this project, which examines the changes in contraceptive use among women and men in Uganda, over the years 1995-2016. Chapter Five reports the results of the second quantitative study, which identifies current predictors of contraceptive use among women and men in Uganda, based on the 2016 Uganda DHS dataset. In Chapter Six I describe the results from the first qualitative phase in this study, which were based on focus group discussions (FGDs) with women in two districts in the Busoga region of east Uganda. In Chapter Seven I report the results from the second phase of qualitative research, which focused on individual, in-depth interviews with men in the Busoga region.

Chapter Eight offers a contextualised interpretation of the results of the preceding chapters, in considering the research questions in this thesis. A discussion of changes and predictors of contraceptive use is presented, followed by a detailed analysis of barriers to contraceptive use identified in this study. A broader discussion of male involvement in family planning and how gender norms within a patriarchal society impact choices and decisions around family planning is then undertaken. Finally, key strengths and limitations of the study are described.

Chapter Nine brings the thesis to a close with its main conclusions and ideas for future research. Implications for policy and practice are also presented as recommendations for family planning service providers and key stakeholders.

2 REVIEW OF THE LITERATURE

2.1 COUNTRY CONTEXT: UGANDA

Uganda is located along the equatorial region of the African Great Lakes, in the eastern part of SSA. The country spans 241,551 square kilometres and borders Kenya in the east Tanzania in the south, Rwanda in the southwest, the Democratic Republic of Congo in the west, and South Sudan in the north, shown in Figure 2.1 (Government of Uganda, 2019). Despite being a landlocked country, prominent bodies of water in Uganda include Lake Victoria and the Nile River, which, together with other lakes and a high altitude, contribute to the country's largely tropical climate. Uganda is divided into 121 administrative districts, which are further subdivided into counties, subcounties, parishes, and subparishes (Ministry of Local Government Uganda, 2017). The capital city is Kampala, with a population of 1.5 million (Uganda Bureau of Statistics, 2016). Most of the country's economy is based on agriculture, with the majority of the population reliant on subsistence farming. For this reason, Uganda has always been self-sufficient in terms of food supply, though the distribution of food can sometimes be inequitable. Cotton, tea and coffee, precious metals and stones, spices and fish are the country's main exports (Uganda Bureau of Statistics, 2012).

Uganda gained independence from British rule in 1962, and in the period immediately after (1962 -1970), the country had a thriving economy with a gross domestic product (GDP) growth rate of five percent per annum. However, the country went through a period of conflict and civil unrest during the 1970s and early 1980s. This unrest resulted in disruptions in the health and education sectors, destruction of social and economic infrastructure, and a halt in the country's economic progress (Uganda Bureau of Statistics, 2001; Wablembo & Doctor, 2013). Since the end of the armed conflict in 1986 and the change of political leadership from Idi Amin to Yoweri Museveni, the government has attempted to reverse the setbacks of the earlier

period and re-orient the country towards economic prosperity with the introduction and implementation of several reform programs in education, health and development. As a result, Uganda's GDP grew at 6.2 percent between the years 1996 and 2000 (Uganda Bureau of Statistics, 2001). In the five years leading up to 2016, the average annual GDP growth rate was 4.5 percent (The World Bank, 2019b).

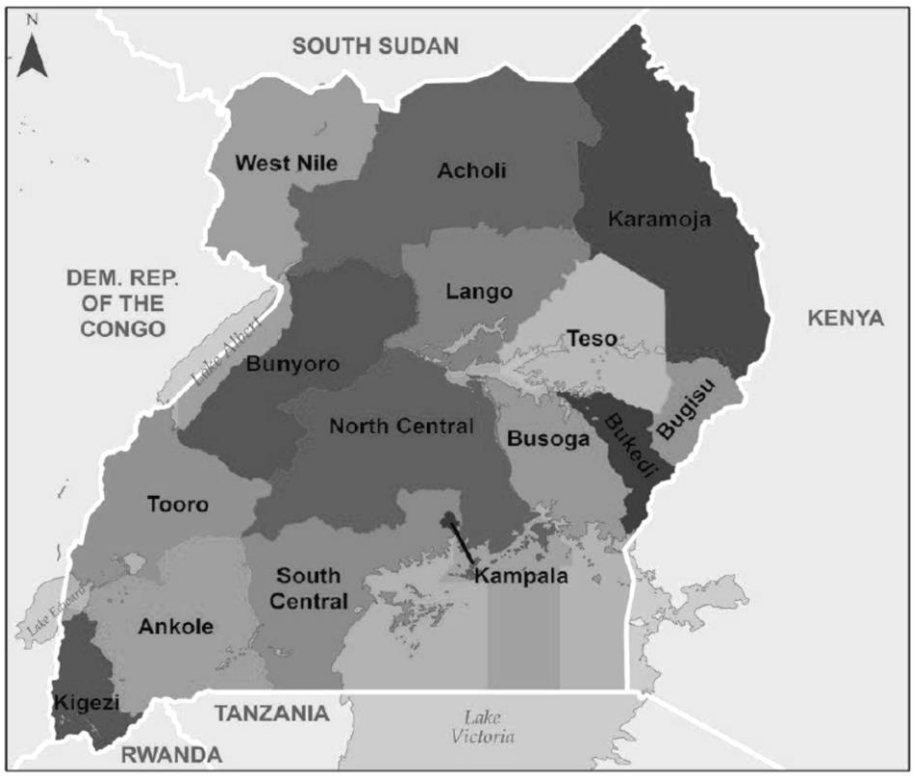

Figure 2.1. Map of Uganda adapted from the Uganda DHS (2016).

The population of Uganda, as of mid-2019, stood at 44.27 million comprising of several tribes that belong to four major groups: the Bantu, Nilotics, Nilo-Himitis, and people of Sudanese origin (Katende, Bessinger, Gupta, Knight, & Lettenmaier, 2000; World Population Review, 2019). The country has seen a rapid and steep population increase over the last several decades, from 9.5 million in 1969 to 34.9 million in 2014, at an annual growth rate of 3.03% (Uganda Bureau of Statistics, 2016). It is projected that if the population growth continues at this rate, Uganda would have a population of 47 million by 2025. However, despite the growth in the

overall population, the total fertility rate has decreased from 6.9 live births per woman in 2000 to 5.4 per woman in 2016 (Uganda Bureau of Statistics, 2018). With more than half of the country's population under the age of 15 years, Uganda has one of the youngest populations in the world (United Nations Population Fund, 2017). The average life expectancy of a woman in Uganda is 65 years, and that of a man is 60 years (World Health Organization, 2016a).

Till the late 1960s, there were more males than females recorded in population censuses. This was mostly a result of large waves of male migrants that came into the country from neighbouring regions to work in the agricultural and manufacturing sectors. This trend reversed towards the mid-1970s as a result of the conflict in Uganda. Many of the migrants returned to their own countries due to Uganda's deteriorating economy at the time (Uganda Bureau of Statistics, 2001). Since then, the country has recorded a higher number of women than men (96.54 males per 100 females), though more boys than girls were recorded in the 0-14 years age bracket (105.3 males per 100 females)(Uganda Bureau of Statistics, 2017c), which again may indicate migratory tendencies among young men.

Where literacy and education are concerned, adult male literacy rates (77.1% in 2014) exceed female literacy rates in Uganda, though women's literacy rates have shown a greater increase over time (67.6% in 2014 compared to 62.0% in 2002), while men's rates have remained unchanged over the same time period (Uganda Bureau of Statistics, 2017a). Similarly, more girls (49.0%) than boys (40.0%) do not complete their primary education, and less females (1.6%) than males (2.4%) complete their tertiary education (Uganda Bureau of Statistics, 2017a).

2.2 UGANDA'S HEALTH SYSTEM

The health system in Uganda comprises of both a public and private sector and is largely decentralised such that districts and health sub-districts (HSDs) are key players in the delivery and management of health services (Ministry of Health Uganda, 2015). The private sector includes both private health providers and private not-for-profits (PNFPs). The Ministry of Health (MOH) oversees management and leadership of the health system, which includes preventive, curative, rehabilitative and palliative care for the population (Ministry of Health Uganda, 2015). Most health facilities are government-owned (2242 health centres and 56 hospitals), with another 613 health centres and 46 hospitals operated by PNPFs, and 269 health centres and eight hospitals owned by private health providers. Hospital services operate in both the public and private sectors, and essentially serve as points of referral and support for the district health services. To ensure standards of care are met across both sectors, a minimum package of health services has been developed for all levels of healthcare, on which healthcare provision in both sectors is based (Ministry of Health Uganda, 2015).

It is estimated that about 72% of the households in Uganda are located within five kilometres of a public or private health facility (Ministry of Health Uganda, 2015). However, health care utilization in some areas remains limited. This is primarily due to a to lack of medicines and other health supplies, poor infrastructure, long waiting times, unfavourable attitudes of health personnel, low salaries or insufficient compensation through unofficial fees (at some public sector facilities), and shortages of personnel in the public sector (Ministry of Health Uganda, 2015).

2.2.1 The public health sector

Health services provided at public health centres are free, with user fees eliminated since 2001, though fees are still charged in the private wings of public health facilities. Health service provision is organized at different tiers: health centres (HCs) I, II, III and IV, the latter being tertiary care hospitals (Ministry of Health Uganda, 2015). As outlined in Uganda's Health Sector Strategic Plans, the different tiers are shown in Figure 2.2 below, with the approximate population numbers that each tier reaches. Public hospitals are largely divided into general hospitals, regional referral hospitals and national referral hospitals. General hospitals cater to a population of approximately 500,000 people, and provide curative, preventive, surgical, in-patient, maternal, laboratory, medical imaging and blood transfusion services. They also provide consultations, in-service training, and research support around community-based health care. The regional referral hospitals provide specialist practices such as ophthalmology, otolaryngology, psychiatry and more advanced medical and surgical services, together with clinical support services (laboratory, pathology, medical imaging, etc.). They are also involved in research and teaching, and cater to a population of about two million people. The national referral hospitals (Mulago and Butabika) provide care for about 30 million people in their jurisdiction, offering a broad range of specialist care in addition to the services offered by general hospitals and regional referral hospitals. At present, there are 56 public hospitals in Uganda: two national referral hospitals, 11 regional referral hospitals and 43 general hospitals. Within the decentralized system, general hospitals are managed by through districts' local governments, while regional referral hospitals are managed by the MOH headquarters and national referral hospitals operate independently (Ministry of Health Uganda, 2015).

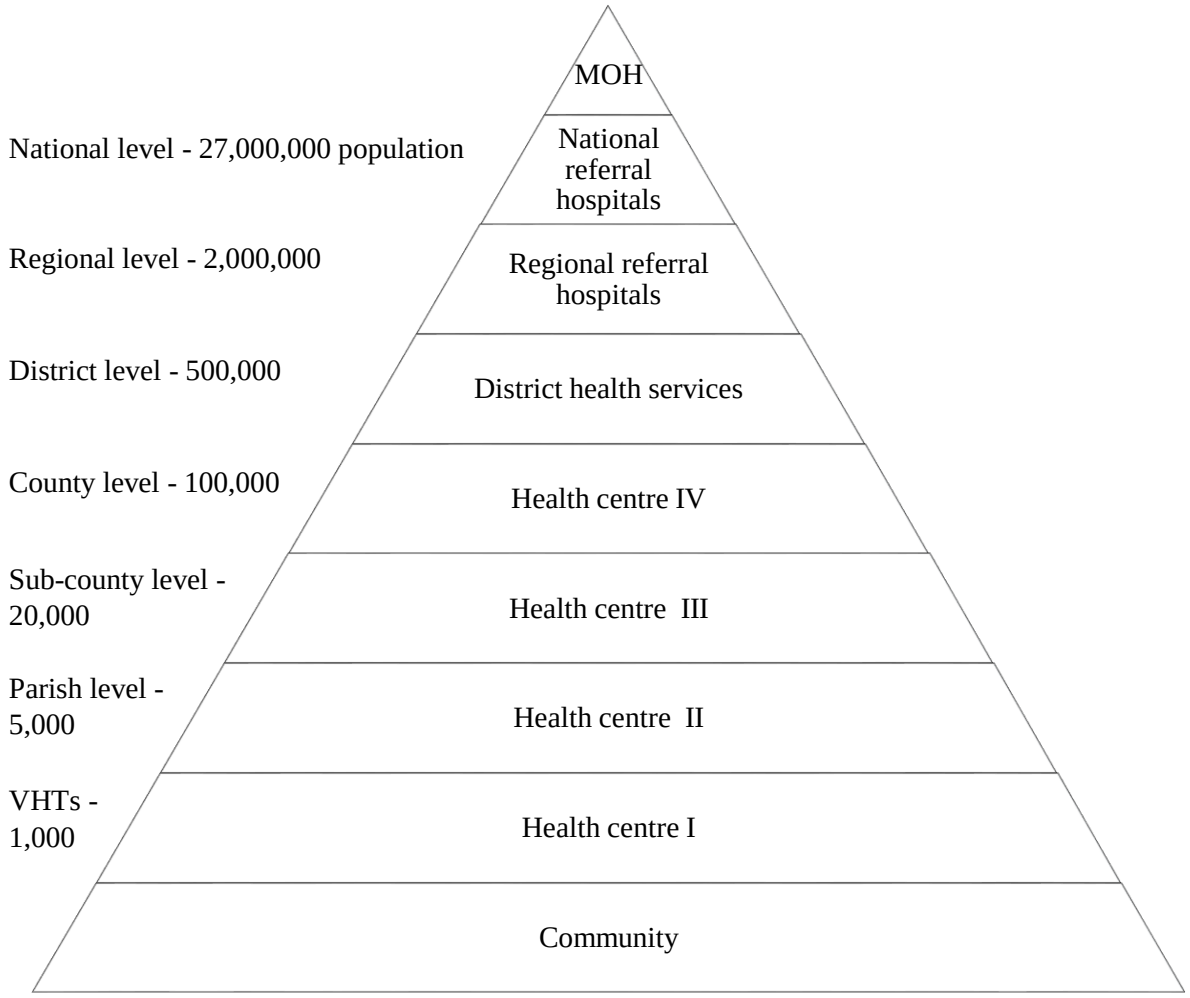

Figure 2.2. The structure of the health system in Uganda, adapted from Uganda's Health sector development plan 2015-2019 (Ministry of Health Uganda, 2015)

The HC I tier comprises of a team of people referred to as a Village Health Team (VHT) rather than a physical structure, and serves as an important link between health services and populations at the community level (Figure 2.3). The VHTs are responsible for overseeing the health needs of the communities they serve, promoting health-seeking behaviour as well as mobilizing resources and health interventions among their constituents. Since they serve as the primary touchpoint between the community and the next tier of the health system, their role in health service delivery and health promotion as well as community empowerment and participation is central to the overall health status of these communities. An example is their

importance in the community-based management of childhood diseases such as diarrhoea, malaria and pneumonia. However, the coverage of VHTs in the country is still quite limited, with teams being established in 75% of districts but only 31% of these districts having trained VHTs reaching all the villages in the respective district. Attrition of staff remains a significant problem, mainly due to insufficient remuneration (Ministry of Health Uganda, 2015).

Figure 2.3 Meeting with a VHT in the rural Luuka district of east Uganda in January 2018.

The HC IIs provide community outreach services and outpatient care, and are the first level of contact between communities and the official health sector, while HC IIIs provide basic preventive and curative care and overall supervision of the HC IIs, VHTs and communities under their jurisdiction (Ministry of Health Uganda, 2015). The HC IIIs are also equipped with diagnostic laboratory services, maternity care and referral services for the sub-county.

The HSDs oversee planning, management, organization and budgeting of the healthcare services provided at the different tiers, which also includes oversight of all preventive, curative and rehabilitative health activities provided by both the public and private sectors. At the district level, local governments plan budgets and implement health sector plans, strategies and policies. They also hold responsibility for the human resource management for district health services (which includes recruitment, deployment and development), the formulation and passing of health-related by-laws, and overall performance monitoring of the health sector. Though both the public and private sectors are monitored and supervised by the HSDs, public-private partnership at this level continues to be in need of strengthening (Ministry of Health Uganda, 2015).

2.2.2 The private health sector

The private sector comprises of PNFPs, private health providers and the Traditional and Complementary Medicine Practitioners (TCMPs), and collectively contributes to approximately 50% of total health sector outputs (Birungi, Mugisha, Nsabagasani, Okuonzi, & Jeppsson, 2001). The PNFPs are better assimilated under the MOH compared to private health providers, and legislation exists for the licensing and regulation of healthcare professionals who work for the private sector. The different components cater to different population groups; the PNFP sector is more structured and concentrated in rural settings, while private health providers are more rapidly growing and present in urban area. The government of Uganda acknowledges the essential role played by the private sector by subsidizing up to 20% of the operating costs of the PNFP and their training institutions, as well as a few of the hospitals. Funding for PNFPs is donor-dependent to an extent, and both the PNFPs and private health providers charge user fees from patients as an approach of raising funds to finance and support their services and facilities (Ministry of Health Uganda, 2015).

The PNFP organizations are mainly divided into two categories: facility-based and non-facility-based PNFPs. Facility-based PNFPs provide both preventive and curative services and constitute 41% of the hospitals and 22% of the lower level facilities that work side-by-side the public facilities, particularly in rural areas (Ministry of Health Uganda, 2015). More than 75% of facility-based PNFPs are managed by four umbrella organisations: the Uganda Protestant Medical Bureau, the Uganda Orthodox Medical Bureau, the Uganda Catholic Medical Bureau, and the Uganda Muslim Medical Bureau. The Protestant and Catholic Medical Bureaus own approximately 70% of the facilities, which to a certain degree also reflects the overall religious distribution of Uganda's population (Ministry of Health Uganda, 2015). The PNFPs also oversee and run 70% of the health training institutions in Uganda.

The non-facility-based PNFP sector is more diverse and less structured compared to the facility-based sector. It comprises of several community-based organisations and non-governmental organizations (NGOs). These mostly provide rehabilitative, palliative, and preventive services which include health promotion and education, counselling, and community health worker support (Ministry of Health Uganda, 2015).

The private health services and facilities in Uganda account for approximately 46% of the total provision. They have a large urban and peri-urban reach and provide a wide range of primary and secondary care services. In absolute numbers, this translates into about 900 private healthcare service delivery points (Ministry of Health Uganda, 2015). Preventive services are limited (except for contraceptive services which are offered by 75% of private health facilities) whereas curative services are more accessible. For instance, more than 90% of private health facilities provide malaria and STI treatment, whereas only 22% offer immunization services. Approximately 40% of private health providers provide adolescent reproductive health services as well as post-abortion care and maternal health services (Ministry of Health Uganda, 2015).

The TCMPs (comprising of traditional birth attendants, herbalists, hydro-therapists, traditional bone setters, traditional dentists and spiritualists) can be found in both urban and rural areas, and services provided vary from imported and/or alternative medicines in urban areas to traditional regimens in rural areas (Ministry of Health Uganda, 2015). Almost 60% of the population in Uganda go to TCMPs before then seeking care via the formal sector. Services can vary widely in location and quality (the majority of TCMPs remain unaffiliated) and most TCMPs have no legitimate link to the public and/or private health sectors. This often results in delayed or late referrals and the subsequent poor management of medical and surgical conditions (Ministry of Health Uganda, 2015).

2.3 MATERNAL HEALTH IN UGANDA

Uganda has one of the highest fertility rates in the east African region, estimated at 5.4 births per woman in 2016 (Uganda Bureau of Statistics, 2018). Unfortunately, as mentioned in section 1.3.1, the country also reported one of the highest MMRs in 2015, with 343 maternal deaths per 100,000 live births (The World Bank, 2015). Taken together, these figures underscore the high maternal health burden faced by Ugandan women of reproductive age (Guttmacher Institute, 2017b). While these figures have been declining as a result of significant improvements to maternal healthcare (Mbonye et al., 2007), they remain relatively high among countries in the SSA region.

Women in Uganda faces challenges around maternal mortality and morbidity from causes related directly to pregnancy and childbirth, obstetric complications such as sepsis, haemorrhage, hypertensive disorders and obstructed labour, and unsafe abortions (Stanback, Mbonye, & Bekiita, 2007; WHO Partnership for Maternal Newborn and Child Health, 2011). Many of these risks are further compounded by inadequacies in the quality and accessibility of

maternal healthcare services, due to a lack of trained staff, medicines and medical supplies, and inequities in service provision for prenatal, delivery care and post-natal care (Rutaremwa, Wandera, Jhamba, Akiror, & Kiconco, 2015). This divide is worse among women of lower socioeconomic status and education (WHO Partnership for Maternal Newborn and Child Health, 2011) and those residing in rural areas, where only 36% of women deliver in a health facility compared to 79% in urban settings (Kyomuhendo, 2003). Table 2.1 below shows a snapshot of the trends in maternal health indicators over the last 20 years from the DHS datasets and the MDG monitoring database for Uganda (Uganda Bureau of Statistics, 2018; United Nations, 2016a).

Table 2.1: Trends in maternal health indicators for Uganda (1995-2016)

	1995	*2000/01*	*2005/6*	*2010/11*	*2014*	*2016*
Maternal mortality ratio [a]	684	620	504	420	343	336
Total fertility rate (15-49 years) [a]	6.9	6.9	6.7	6.2	5.7	5.4
Unmet need for family planning (%) [b]	30.0	35.0	38.0	34.3	34.7	28.4
Married women (15-49 years) currently using any contraceptive method (%) [a]	14.8	22.8	19.7	30.0	27.2	39.0
Skilled attendance at birth (%) [a]	27.8	39.0	41.9	57.4	-	74.2
Antenatal care coverage (at least 4 visits) (%) [a]	47.2	41.9	47.2	47.6	-	59.9

Source of data: (a) DHS Uganda (b) MDG monitoring database for Uganda

Maternal health Uganda has been recognised as a priority area in the government's national health agenda, particularly through strategic initiatives such as the Roadmap for Accelerating the Reduction of Maternal and Neonatal Mortality and Morbidity in Uganda (2007-2015), and the more recent Health Sector Development Plan (2015-2019) (Uganda Bureau of Statistics, 2018). Uganda's MOH clinical guidelines recommend four antenatal care visits during pregnancy; institutional deliveries in the presence of skilled attendant; and postnatal check-ups

for all women within the first 24 hours after an institutional delivery or within the first 12 hours after a home-delivery (The Republic of Uganda, 2016). In 2016, 97% of women received antenatal care during their pregnancy, though only 60% completed all four visits and only 29% of women had their first visit within the first trimester of their pregnancy. Institutional deliveries increased from 37% in 2000 to 73% in 2016, though this was largely among urban, educated women. The likelihood of a facility-based delivery decreases with increasing birth order and there remain large regional differences in access to skilled birth attendance. Only 54% of women received a postnatal check-up in the 48 hours after their most recent birth (Uganda Bureau of Statistics, 2018). These figures indicate that despite political commitment towards improvements in maternal health, the implementation and sustainability of many of these initiatives are constrained by limited human and financial resources, the unequal allocation of resources towards programs in different regions, a lack of collaborative effort among different stakeholders involved, and a weak health system (Benova et al., 2018; Wallace & Kapiriri, 2019).

2.4 FAMILY PLANNING IN UGANDA

2.4.1 Uganda's history of family planning initiatives

Family planning programs in Uganda first commenced in 1957, after the Family Planning Association of Uganda (FPAU), affiliated to the International Planned Parenthood Federation, was established. In the early period after the FPAU's inception, family planning services were largely restricted to urban areas, despite the fact that at the time, more than 80% of Uganda's population lived rurally (Uganda Statistics Department, 1996).

In the decades that followed, Uganda recognized the problems imminent with rapid population growth, but failed to achieve much progress in family planning program development. This

was largely due to the political and economic turmoil in the country, which was a consequence of the conflict and civil unrest during Idi Amin's rule in the 1970s and 1980s. The government first discussed the country's population growth in its Five-Year Development Plan for the years 1972–1977, and provided assistance towards the FPAU's efforts in family planning information dissemination (National Research Council, 1993). By 1973, FPAU staff were in charge of 20 of the 28 clinics offering contraceptive services in the whole country (Nortman, 1981). In 1984, as part of the primary health care strategy, the Ugandan government integrated family planning service provision into the existing maternal and child healthcare programs, with the goal of reducing the overall rates of maternal morbidity and mortality in the country. By the years 1988-1989, contraceptive prevalence in Uganda was improving, with half the clients obtaining services from the FPAU and the rest from different private sources (National Research Council, 1993)

Policies around family planning service provision at the time further hampered women's uptake of these services. Until the mid-1990s, family planning services were offered only to married women, but on the condition that married women were accompanied by their partners or could provide written documentation as evidence that their husbands had consented to their contraceptive use (Blacker, Opiyo, Jasseh, Sloggett, & Ssekamatte-Ssebuliba, 2005). Moreover, the provision of contraceptive services for adolescents was prohibited, and discouraged for unmarried women. However, in the aftermath of the 194 International Conference on Population and Development in Cairo, the government of Uganda incorporated family planning into the country's policies around reproductive health for all populations, in a bid to make services more inclusive and accessible. Subsequently, family planning services were made available in all public clinics under the purview of the MOH (Blacker et al., 2005). The ongoing HIV/AIDS epidemic in the country at the time also substantially altered discussions around reproductive health in Uganda, leading not only to an increased acceptance

and use of condoms, but also to a more open and supportive environment for conversations about sexual health (Ministry of Health Uganda, 2014; Wablembo & Doctor, 2013).

Since the early 1990s, the government of Uganda thus made substantial progress in addressing the country's growing population and health issues, including those around reproductive health. With the establishment of a Population Secretariat within the Ministry of Planning in 1989, population policies and programs across the country were more streamlined and coordinated. Additionally, an integrated reproductive health project named the Delivery of Improved Services for Health was initiated by the MOH in 1994, backed by United States Agency for International Development (USAID) funding (Katende et al., 2000). The goals of the initiative were to reduce total fertility rates in the country, as well as decrease the incidence of HIV infection in 10 of Uganda's 39 districts through increasing the availability and utilization of reproductive health services. These included family planning, HIV testing and counselling, the diagnosis and treatment of STIs, and maternal health services. The program saw increases in modern contraceptive use among both women and men, particularly the use of condoms and the injectable, though the uptake of long-term methods (implants, IUDs, etc.) remained low. Strategies around increasing information, education and communication about family planning and sexual and reproductive health for both women and men were also successfully implemented using targeted messages through the radio, newspapers and social marketing campaigns (Katende et al., 2000).

However, it was not till 1995 that Uganda adopted the National Population Policy, with the overall goal of intervening in future demographic trends and actively steering these in a direction that would ultimately improve the quality of life and standard of living of the population (Uganda Statistics Department, 1996). Where family planning goals were concerned, the policy aimed to increase the contraceptive prevalence rate from 7.8% to 15% by 2000 (Ministry of Finance and Economic Planning, 1995). Though family planning has

since been part of the government's policy on reproductive health, it remains predominantly focused on urban areas, while knowledge and availability of contraceptives remains low in many rural settings. Furthermore, family planning remains at a relatively low position on the MOH's list of health priorities, with some ministers and government officials continuing to advocate for pro-natalist beliefs and practices (Ministry of Health Uganda, 2014).

2.4.2 Uganda's family planning policy commitments

2.4.2.1 FP2020

At the 2012 London Summit on Family Planning, the Ugandan government, represented by President Museveni, committed to ensuring "universal access to family planning and to reduce unmet need for family planning from 40 percent to 10 percent in 2020" (FP2020, 2012, no page). The government pledged to achieve this goal by increasing the allocated funding for family planning commodities from US$3.3 million to US$5 million over a five year period, as well as integrating family planning services with other health services by leveraging on public-private partnerships, and supporting alternative models of service provision such as community-based distribution (CBD) and social marketing and social franchising (FP2020, 2012).

At the 2017 London Summit on Family planning, the government of Uganda updated its commitment to reflect the targets of the Uganda FP-CIP (described in the next section), which were to "reduce unmet need for family planning to 10 percent and increase the modern contraceptive prevalence rate among all married women to 50 percent by 2020" (FP2020, 2017, no page). Renewed commitments at the time included leveraging an additional US$20 million from development partners and the private sector to fund and execute the Uganda FP-CIP, as well as allocating additional resources towards increasing family planning commodities,

adolescent-friendly family planning service provision and expanding the pool of trained healthcare staff providing long-term and permanent contraceptive methods. The implementation of these commitments was projected to avert 4,067,731 unintended pregnancies, 579,550 abortions, 6,072 maternal deaths and 118,700 child deaths (FP2020, 2017).

2.4.2.2 The Uganda Family Planning Costed Implementation Plan (2015-2020)

In 2014, Uganda's MOH, in collaboration with the UNFPA and several implementing partners, developed the Uganda FP-CIP, 2015–2020. This was intended to be an overarching policy document to guide national level strategies and programs aimed at increasing and improving family planning initiatives and access. With the principal goals of reducing unmet need and increasing modern contraceptive prevalence rates in Uganda, the FP-CIP outlined five key priority areas: to increase information, access and uptake of family planning among youth and young people, particularly in the age groups of 10-24 years; to promote individual and social behaviour change in an effort to address the myths and misconceptions around family planning and consequently improve acceptance and uptake of family planning; to implement task-sharing in family planning service provision, with the goal of increasing access and reach, particularly among rural communities; to encourage multi-sectoral cooperation and partnership with regard to family planning programs, service delivery and policy; and to improve the distribution, procurement and forecasting of family planning commodities across both public and private sectors of the health system, to ensure availability and funding for contraceptive methods (Ministry of Health Uganda, 2014).

The strategic action areas of the Plan, which also incorporate Uganda's FP2020 commitments, are structured around six essential focal areas: (i) demand creation, (ii) service delivery and

access, (iii) contraceptive security, (iv) policy and an enabling environment, (v) financing, and (vi) stewardship, management and accountability. The cost of the plan was estimated at US$235 million across the years 2015-2020, with a projected increase in contraceptive use from 1.7 million users in 2014 to 3.7 million users in 2020 (Ministry of Health Uganda, 2014).

2.4.3 Current family planning service provision in Uganda

At present, family planning services in Uganda are provided in clinics run by both government and non-government institutions and organizations. The FPAU changed its name to Reproductive Health Uganda (RHU) in 2007 and continues its pioneering work as the lead NGO provider for family planning services in the country (Reproductive Health Uganda, 2018). The RHU is also the local implementation arm of Advance Family Planning (AFP), an initiative supported by the Gates Foundation and the John Hopkins Bloomberg School of Public Health which advocates to increase both the political and financial commitment to enable voluntary family planning (Advance Family Planning, 2015). Outside of contraceptive provision by government-run clinics, health facilities and the RHU, the largest private partner organizations that currently operate in the country are Marie Stopes Uganda, the Program for Accessible Health Communication and Education, Family Health Initiatives 360, Pathfinder International and the Uganda Health Marketing Group (Advance Family Planning, 2015). Together, these organizations also form the Uganda Family Planning Consortium, which is a representative body for family planning advocacy initiatives in Uganda.

Another key player in the family planning advocacy landscape in Uganda is the African Regional Office of the Partners in Population & Development. This organization works to improve the reproductive health and rights in partnership with NGOs and other civil society organizations. Together with AFP, the organization provides a platform for promotion and

resource mobilization for reproductive health, population and development in Uganda and the African continent as a whole (Advance Family Planning, 2015).

Where contraceptive supplies in Uganda are concerned, the main organizations responsible are the National Medical Stores and Joint Medical Stores. To increase availability, access and uptake of family planning commodities, the MOH developed the Alternative Distribution Channel Strategy in 2015 to make available to the PNFP and PFP sectors the same free contraceptive commodities from the public sector, which has greatly increased the reach and distribution of contraceptive options across communities (United Nations Population Fund, 2018). In addition, a large proportion of the population accesses contraceptives through social marketing efforts that are heavily subsidised by partnering organizations. The MOH also proposed a total market approach to increase access to family planning services and methods across all the family planning market segments (Ministry of Health Uganda, 2014).

In 2010, the MOH published service delivery standards and policy guidelines for a CBD model for injectable contraceptives in Uganda, as an addendum to the Uganda National Policy Guidelines and Service Standards for Sexual and Reproductive Health (Hoke et al., 2012). This policy guideline officially allowed trained VHTs to provide injectable contraceptives to women in their communities, following the success of pilot models of CBD which employed both male and female VHTs in the provision of contraceptive counselling and injectables (Kipp & Flaherty, 2003a; Stanback et al., 2007).

At present, almost 50% of the current family planning users in Uganda obtain contraception through government-run clinics. Of the remaining users, 45% percent access family planning services through private clinics or hospitals, and the remaining five percent depend on mobile clinics, VHTs, private pharmacies and drug shops for their contraceptive methods (Ministry of Health Uganda, 2014).

2.5 UNMET NEED FOR CONTRACEPTION IN UGANDA

Uganda has seen improvements in the uptake of contraception over the last decade, and the current contraceptive prevalence rate stands at 39% among married women of reproductive age (15-49 years) (Uganda Bureau of Statistics, 2018). Yet despite this progress, unmet need for contraception remains high at 28.4% of married women of reproductive age, and 31.9% of sexually active, unmarried women (Uganda Bureau of Statistics, 2018). With a total fertility rate of 5.4 children per woman at the national level, almost 60% of women surveyed in Uganda have 'short' spacing of less than 24 months between births, and yet women are increasingly desiring smaller families (United States Agency for International Development, 2015). Among postpartum Ugandan women, only 25% currently use contraception and a significant number experience an unmet need for contraception, with 41% seeking longer spacing between births and a further 27% wishing to limit the number of births (United States Agency for International Development, 2015).

In a report by the Guttmacher Institute, it was estimated that 56% of all pregnancies in Uganda were unintended (Vlassoff, Sundaram, Bankole, Remez, & Mugisha, 2009). Approximately 490,000 unintended pregnancies and 150,000 induced abortions are averted in Uganda each year as a result of contraceptive use. These estimates increase to a further 519,000 unintended pregnancies and 152,000 abortions that would be avoided, a decrease of 40% in maternal mortality, and an 85% decline in unintended births and abortions if women's unmet need for contraception were satisfied (Guttmacher Institute, 2017c).

As unmet need is a direct measure of *women's* contraceptive needs and uptake, most of the existing research has focused on factors that affect women's contraceptive use. In the context of Uganda, the reasons for unmet need are many. While knowledge about contraception and different contraceptive methods is almost universal among women (and relatively high among men) in Uganda, research points to a discrepancy between levels of contraceptive uptake and

contraceptive awareness (Agyei, Agyei, Migadde, & Migadde, 1995; Dougherty et al., 2018). At the individual level, women's higher educational levels and socioeconomic status (commonly measured using wealth index[1] as a proxy), as well as higher age and parity and urban place of residence (versus rural) show associations with higher rates of contraceptive use (Andi, Wamala, Ocaya, & Kabagenyi, 2014; Asiimwe, Ndugga, Mushomi, & Ntozi, 2014). Women with better access to education are usually more aware of the benefits of family planning services (Agyei et al., 1995; Ouma et al., 2015), and urban residence and higher socioeconomic status allows them more opportunities for, and better access to, contraceptive options (Andi et al., 2014; Ketende, Gupta, & Bessinger, 2003). Older women and women of higher parity are more likely to use contraception to limit their number of pregnancies, and women's economic independence and empowerment favour contraceptive use (Asiimwe et al., 2014; Do & Kurimoto, 2012; Morse, Rowen, Steinauer, Byamugisha, & Kakaire, 2014). Finally, exposure to advertisements and health messages about family planning via the radio are associated with higher levels of women's contraceptive use, as does the discussion of contraceptive use with a partner (Agyei et al., 1995; Bakibinga et al., 2016; Gupta, Katende, & Bessinger, 2003).

Previous studies have also explored different barriers to contraceptive use at the individual, household, societal and health system levels. Some of the recurring themes that emerge from the research are misconceptions about contraception and the fear of side effects, partner opposition, societal and gender norms, provider-related issues and constraints within the health system (Kabagenyi et al., 2016; Nalwadda et al., 2010; Ouma et al., 2015; Stephenson et al., 2007). The following sections describe some of these barriers in further detail.

[1] Wealth index is used as a proxy for socioeconomic status, and is a composite measure of a household's cumulative living standard. The wealth index is calculated using easy-to-collect data on a household's ownership of selected assets, such as televisions and bicycles; materials used for housing construction; and types of water access and sanitation facilities (Uganda Bureau of Statistics, 2018)

2.5.1 The influence of socio-cultural norms on contraceptive use

Cultural and societal norms heavily influence the decision of whether or not to use contraception. The concept of 'family' in African societies often refers to both the nuclear and the extended families (grandparents, uncles, aunts, cousins) that provide social, economic and psychological support to its members (Amos, 2012). The extended family can thereby also impose socio-cultural expectations on women and men in their communities. In a study by McGuire and Stephenson (2015), women residing in communities with a higher average age at first marriage, higher parity and higher average maternal age were shown to have higher contraceptive uptake and longer spacing intervals between pregnancies.

Community beliefs and acceptance of contraceptive use can therefore be an influential factor in women's own contraceptive knowledge, choices and behaviour. This often relates to the social costs of contraceptive use, particularly when community attitudes towards contraceptive use may conflict with women's own fertility desires or contraceptive needs, or when contraceptive use is stigmatized and associated with infidelity and/or prostitution (Bulatao & Lee, 1983; Campbell, Sahin-Hodoglugil, & Potts, 2006; Nalwadda et al., 2010; Paul, Näsström, Klingberg-Allvin, Kiggundu, & Larsson, 2016). Beliefs and sources of knowledge about contraception within the community are held in high regard, and therefore conforming to these norms, particularly in community-centric societies such as Uganda, is given high social value (Rutenberg & Watkins, 1997).

With polygyny still being actively practiced in some parts of Uganda, bearing more children is seen as a competitive edge between co-wives and therefore healthy spacing or delay of pregnancies is often not a consideration in these situations (Kabagenyi et al., 2016). The tradition of a 'bride price', where a man has to pay either a sum of money or provide an offering of gifts to his bride-to-be's family can place added pressure on a new bride from her partner as well as her in-laws and the extended family, to have as many children as her husband desires,

and soon as possible after marriage (Kabagenyi et al., 2016). For this reason, the use of contraceptives by young and/or married women who have no children is frowned upon (Adams et al., 2013; Nalwadda et al., 2010). In some instances it has been documented that healthcare providers are also reluctant to provide contraceptive options to young, newly married women for these reasons (Nalwadda, Tumwesigye, Faxelid, Byamugisha, & Mirembe, 2011; Paul et al., 2016).

Traditional, religious and cultural practices around pro-natalist beliefs further discourage the use of contraception in many communities. For instance, the value of having many children, preferably sons, in order to extend the family lineage, preserve one's clan and replace ancestors who have passed on, is still emphasized in many parts of Uganda today (Kabagenyi et al., 2016; Ntozi & Kabera, 1991). Community expectations of women's role as child-bearers, and the status women (and their partners) gain if they fulfil this role by having many children is another source of societal pressure that many women contend with. Religious beliefs, especially those that consider children to be a 'gift from God' and a source of blessing, also discourage the use of contraception as it is seen as akin to 'the killing of innocent, unborn children' (Kabagenyi et al., 2016). Some clergy members and religious leaders promote childbearing with statements such as "go out and multiply" (Nalwadda et al., 2010, p. 7) while strongly condemning the use of contraception, and instilling a fear of direct disobedience of such precepts among followers of these religions (Kabagenyi et al., 2016).

2.5.2 Limited male involvement and partner opposition to contraceptive use

The significance of men's roles as women's partners in decisions around contraception is often understated, particularly in patriarchal societies and settings. The few studies that have focused

on men's views and perceptions about family planning have shown that men's negative attitudes toward family planning, fear of side effects such as infertility, and suspicions of infidelity and promiscuity among women who use contraceptives, can significantly affect their partner's choices and ability to use contraception (Adelekan, Omoregie, & Edoni, 2014; Kabagenyi, Jennings, et al., 2014; Paek et al., 2008; Vouking, Evina, & Tadenfok, 2014). Contraceptive use has been shown to be higher in communities where women have more autonomy and decision-making power (DeRose & Ezeh, 2010), and where spousal communication takes place, whether through direct conversation or indirect suggestions and non-verbal cues, the latter being more common (Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). Contrarily, partner opposition is often a predictor of poor healthcare access, unmet need for contraception, the use of traditional rather than modern methods, and clandestine use of contraception (Adelekan et al., 2014; Orach et al., 2015; Shumba et al., 2016; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000).

Though men's participation in the family planning process has been recognized as critical to its effectiveness, there remains a gap between this knowledge and its implementation in practice. Traditional gender roles and expectations dictate that pregnancy, family planning and reproductive health are a 'woman's business', and thereby exclude men's involvement in the process (Adelekan et al., 2014; Kabagenyi, Jennings, et al., 2014; Vouking et al., 2014). The structural limitations of some family planning programs further exacerbate this; for example, providers being female, men not feeling welcome or comfortable in family planning clinics, and a lack of trust of providers and assurance of their confidentiality during discussions about contraception, often result in men not participating at all (Adelekan et al., 2014; Kaida, Kipp, Hessel, & Konde-Lule, 2005). Similarly, campaigns seeking to raise awareness of family planning have usually targeted women in the past (Kabagenyi, Jennings, et al., 2014).

The low rates of involvement of men in family planning, and yet their dominant role in decisions about whether to use contraception or not, or which methods to use, has a great impact on their partner's health and reproductive choices (DeRose & Ezeh, 2010; Mugisha & Reynolds, 2008; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). A lack of spousal communication on fertility preference as well as the timing and spacing of pregnancies has often been reported in the literature (Kabagenyi et al., 2016; Orach et al., 2015; Paek et al., 2008; Vouking et al., 2014). Coupled with a male-dominant, normative decision-making process, this often results in men making decisions around contraception without much discussion or consultation with their partners (Ghanotakis et al., 2016; Stern, Pascoe, Shand, & Richmond, 2015; Williamson, Liku, McLoughlin, Nyamongo, & Nakayima, 2006; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000).

Patrilineal tradition in Uganda regarding family sizes often lend preference to larger families with many children (Kaida et al., 2005). Reasons cited for this include men's resulting enhanced status in the community, relatively high rates of child mortality (particularly during conflicts), and economic and social security, as children often contribute to the family's income by working in the fields and participating in labour (Garner & de la O Campos, 2014). As a result, men and women's fertility preferences are often discordant (Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000); while a woman may desire to limit the number of pregnancies, her partner may not support her use of contraception due to a desire for more children (Kabagenyi, Jennings, et al., 2014). These decisions can be made by men and other family members, such as in-laws and extended family, at times with little regard of the opinions or health of the woman. As the principle decision-maker for such issues, the man's opinion is often the final directive on the matter, and women are not expected to use contraception without obtaining permission or approval from their spouse (Bietsch, 2015). This often results in women's covert contraceptive use as a way of exerting control over their own fertility choices

and reproductive needs (Hyttel, Rasanathan, Tellier, & Taremwa, 2012; Mugisha & Reynolds, 2008; Nakayiza, Wamala, & Kwagala, 2014).

While men's awareness about family planning is important, the fears and misconceptions they have about the potential side effects of contraceptive methods are equally critical. Beliefs about women's permanent loss of fertility, congenital abnormalities of the foetus during pregnancy and cancer are common among men (Kabagenyi, Jennings, et al., 2014; Sileo, Wanyenze, Lule, & Kiene, 2017). Men also report being unhappy, frustrated and inconvenienced by their partner's contraceptive side effects that consequently affect men's sexual pleasure; irregular bleeding, vaginal dryness, loss of libido, dizziness and fatigue are commonly cited examples (Dougherty et al., 2018; Kabagenyi, Jennings, et al., 2014). This is further hampered by extra costs incurred to treat such side effects, as well the resulting lost productivity of women when they are unable to work due to these side effects, thereby reducing their economic contribution to the family income (Ouma et al., 2015; Thummalachetty et al., 2017).

Another challenge that women are faced with is their partner's suspicion of infidelity, which is often associated with women's contraceptive use. Women are often labelled as being unfaithful and promiscuous if they use contraception, particularly when their intention for use is assumed to be to avoid a pregnancy within an extra-marital relationship (Bietsch, 2015; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). As a result, male partners are unsupportive of family planning, and women often report fears of abandonment and violence if they were to be discovered covertly using contraceptives (Kabagenyi, Jennings, et al., 2014; Kaida et al., 2005; Shumba et al., 2016). Interestingly, fewer reports exist of women being suspicious if their partners insist on using condoms (Kaida et al., 2005), though polygamy and extra-marital affairs are known to be more common among men than women (Ghanotakis et al., 2016; Kabagenyi et al., 2016; Nalwadda et al., 2010; Reichwein et al., 2015).

The limited availability of contraceptive methods for men is also an issue that has been reported in the literature (Kaida et al., 2005). Men's dissatisfaction with male condoms, and the permanence and irreversibility of vasectomy is often described as problematic and impractical for men (Kabagenyi, Jennings, et al., 2014). Coupled with issues such as the distance to health clinics and the cost of transport, this serves as a further dis-incentive for men to seek out family planning (Alum, Kizza, Osingada, Katende, & Kaye, 2015; Hyttel et al., 2012).

As outlined above, male involvement in family planning programs is central to their success and continuation. Given that many contraceptive methods are female-centric (pills, injectables, etc.), it is extremely important that women are supported by their partners to use these. It is encouraging however, to note that more research and actions have been undertaken to better involve men in family planning programs and reproductive health discussions (Ghanotakis et al., 2016; Kaida et al., 2005; Kipp & Flaherty, 2003a; Stern et al., 2015). Some of these initiatives include couple counselling (Kabagenyi, Ndugga, Wandera, & Kwagala, 2014), mass media campaigns targeted at both men and women (Gupta et al., 2003), and the involvement of men as community health workers, advocates and enablers of change in reproductive health and family planning programs (Ghanotakis et al., 2016; Stern et al., 2015). Some programs also advocate for conversations and alternate perspectives around long-held gender norms and expectations, with the goal of achieving more equitable decision-making about contraception among men and women in the long run. The influence of gender norms on unmet need is described in more detail in the next section.

2.5.3 The influence of patriarchal gender norms on contraceptive use

Gender norms vary significantly across and within cultures, and are largely determined by the societies which people live in; these norms also dictate differences in rights, roles, expectations,

and opportunities for women and men in that society (Namasivayam, Osuorah, Syed, & Antai, 2012). The existing literature on gender equity, gendered norms and how these affect access and uptake of healthcare services globally is extensive. Gender norms have been in shown to affect fertility decisions and reproductive behaviour in a number of different contexts (Bankole & Singh, 1998; Fattah & Camellia, 2020; Hussain, 2003; Paek et al., 2008; Walcott et al., 2015; Waszak, Severy, Kafafi, & Badawi, 2001). The gender equity theory and gender essentialist theory are just two of many examples from the literature that attempt to provide an explanation for the underlying mechanisms of how these norms influence fertility trends (Brinton, 2016; Lagro-Janssen, 2007; McDonald, 2000; Sen, George, & Östlin, 2002)

In qualitative studies that have focused on the role of gender norms in health-seeking behaviour, the unequal and male-dominated power relations between men and women in Uganda's largely patriarchal context are often mentioned, as described in the section 2.5.2 (Ghanotakis et al., 2016; Kabagenyi et al., 2016). Several studies have also looked at women's status and the negotiation processes they engage in (or struggle to) around contraceptive use with their partners (Blanc & Wolff, 2001; DeRose & Ezeh, 2010; Williamson et al., 2006). In an in-depth analysis of power in sexual relationships and how this affects reproductive health, Ann Blanc posits that gender norms affect both 'power to' and 'power over', and that gender-based power is often unbalanced, and less in favour of women (Blanc, 2001). This gives rise to a sexual double standard, where men enjoy greater sexual freedom and control, particularly when it comes to decisions around sexual and reproductive health access and choice (Bingenheimer, 2010; Riley, 1997). Men are usually the primary decision-makers around contraceptive use, while the implementation of these decisions are left to their partners (Bietsch, 2015; Blanc, 2001). This has invariably led to many family planning programs being designed and targeted almost exclusively at women, consequently reinforcing the notion that family planning is a woman's 'business' (Adelekan et al., 2014; Kabagenyi, Jennings, et al.,

2014). The burden of contraceptive use falls on women as a result, while at the same time women may have very little agency or decision-making autonomy with regard to contraceptive practice (DeRose & Ezeh, 2010). One way women tackle this is through covert contraceptive use, particularly in situations where their partners are completely opposed to contraception (Biddlecom & Fapohunda, 1998).

As highlighted before, an important and related aspect is a lack of spousal communication in relationships, particularly around sex, sexual health and child spacing, which can be a product of power inequality and gender norms in a relationship (Paek et al., 2008; Wegs, Creanga, Galavotti, & Wamalwa, 2016). Women are expected to be passive about sex, and women who do raise the issue in discussions are commonly accused of being promiscuous (Blanc, 2001). As a result, a number of assumptions are made by women about their partner's opinions around family size, child spacing and contraceptive use, without actual discussion about these topics or based on indirect or non-verbal cues (Bankole & Singh, 1998; Williamson et al., 2006). This too leads to covert contraceptive use, particularly when women assume their partners are opposed to contraceptive use and want bigger families, but cannot raise the subject with them (DeRose, Dodoo, Ezeh, & Owuor, 2004; Kabagenyi et al., 2016).

The long-standing civil war in Uganda has also altered the nature of gender roles at different points in time. Many women had to assume new and additional responsibilities such as engaging in manual and agricultural labour and selling goods at the market in order to financially support their family (Adams et al., 2013). Children were also valued more due to the large number of kidnappings and deaths during the country's many conflicts, which in turn altered fertility behaviours and norms among couples during this time. Bearing more children was seen as a way to preserve the continuity of the family line, and replace those lost in conflict (Urdal & Che, 2013).

Gender-based or intimate partner violence is another issue that many women contend with, especially in instances where they are discovered to be defying their partner's wishes by using contraceptives covertly. This is usually because their partners suspect them of being unfaithful and trying to avoid a pregnancy with an extra-marital partner, as mentioned in section 2.5.2 (Adams et al., 2013; Nalwadda et al., 2010; Williamson et al., 2006). Studies also report violence being an 'accepted' option for women if they are seen to disagree with or 'disobey' their partners, or do not bear enough children (Kabagenyi et al., 2016). Gender norms therefore can greatly influence women's decisions and actions around contraceptive use, particularly when women face serious consequences if they do not comply with their expected roles in a relationship.

2.5.4 Contraceptive myths, misconceptions and fears of side effects

Widespread myths, misconceptions and fears of both real and perceived negative contraceptive side effects are a barrier to contraceptive use (Diamond-Smith, Campbell, & Madan, 2012; Kaye, 2006; Orach et al., 2015; Shumba et al., 2016). Fears of barrenness, cancer, still births and congenital deformities are commonly reported beliefs that mass media campaigns and family planning outreach programs have yet to successfully dispel (Kabagenyi et al., 2016; Kibira, Muhumuza, Bukenya, & Atuyambe, 2015; Morse et al., 2014; Willcox et al., 2019). Furthermore, known contraceptive side effects such as prolonged bleeding, vaginal dryness, weight gain and reduced libido, and the poor management of these, have shown to result in the switching of contraceptive methods, or discontinuation of contraceptive use (Hyttel et al., 2012; Kakaire, Nakiggude, Lule, & Byamugisha, 2014; Kibira et al., 2015; Tibaijuka et al., 2017). Myths and beliefs around contraceptive side effects effectively prevent potential contraceptive users from taking up a method. These fears also hinder existing contraceptive users from

continuing with a method over time, or considering alternative methods if they encounter side effects with their initial method (Kibira et al., 2015), thereby increasing the likelihood of unintended pregnancies.

The reliance on peers rather than healthcare providers as a source of family planning information remains a challenge in addressing these myths and fears associated with contraceptive side effects (Rutenberg & Watkins, 1997). Some reproductive health initiatives, however, have employed peer educators and 'expert users' with in educating communities about the benefits of contraceptive use, while dispelling misconceptions and providing accurate information around side effects and their proper management (Boulay & Valente, 1999; Lutalo et al., 2010; Willcox et al., 2019). These initiatives have had varying levels of success; while short-term improvements in contraceptive knowledge, attitudes and intention have been observed, the impacts on long-term outcomes around behaviour change, fertility norms and contraceptive uptake are less certain.

2.5.5 Accessibility to contraceptive services

The affordability of contraceptives and the time and costs associated with obtaining these (transport costs, travel time due to long distances, long waiting times) are a hindrance to many women (Hyttel et al., 2012; Ketende et al., 2003; Krueger, Akol, Wamala, & Brunie, 2011; Ouma et al., 2015). In public clinics, contraceptives are provided for free but, coupled with overworked service providers in understaffed clinics, frequent contraceptive method stock-outs and long waiting times, obtaining contraceptives becomes a long difficult and process. Many women therefore opt to switch methods or discontinue their current method, increasing their risk of unintended or poorly spaced pregnancies (Bruce, 1990; Grindlay, Turyakira, Kyamwanga, Nickerson, & Blanchard, 2016; Muhindo et al., 2015). This is particularly so for

poorer populations in urban areas as well as for rural populations, which constitute almost 80% of Uganda's population. In such settings, VHTs are the main touchpoint for healthcare access and are often unable to provide contraceptive services beyond general counselling and short-term methods such as condoms (Hoke et al., 2012; Mukwaya, Bamutaze, Mugarura, & Benson, 2012; Rutaremwa, Kabagenyi, et al., 2015; Stanback, Spieler, Shah, & Finger, 2010).

Financial and geographical constraints also hinder the uptake of long-term contraceptive methods such as implants and IUDs, due to women having to seek out trained providers for their insertion (in HC III or IV facilities, which are usually further away), the costs of the method itself, transport costs to the clinics, and inconveniences associated with removing these methods (Anguzu et al., 2014; Tibaijuka et al., 2017). Additionally, women who experience side effects from contraceptive use cite the costs associated with managing treatment as a further financial barrier to contraceptive uptake (Willcox et al., 2019). The use of vouchers and social franchise schemes, particularly for long-term methods in more rural and remote settings in Uganda has shown some success in overcoming some of the financial constraints highlighted above (Bellows et al., 2017), yet accessibility to these contraceptive methods remains a challenge for women in many of these communities.

2.5.6 Challenges with family planning service providers and service provision

Healthcare providers play an important and influential role in women's and couple's choices around whether and when to use contraception, as well as the type contraception to use. Past research has documented factors such as provider knowledge, skills and training (particularly for hormonal methods such as injections, and long-acting methods such as IUDs and implants) as well as providers' own personal views and opinions regarding contraception, as significantly

impacting women's knowledge about and use of contraception (Kakaire et al., 2014; Kibira et al., 2015; Orach et al., 2015; Pitorak, Lubaale, & Gurman, 2014).

Healthcare providers are an influential group of 'expert professionals' when it comes to women making decisions around contraceptive use (Kibira et al., 2015). Their advice on method selection, the management of side effects and counselling on alternative options, as well as the confidentiality and trust provided, especially for young women who may be using contraceptives covertly, are key to the sustained and proper use of contraception. However, two recurring themes in the literature on family planning service provision are the misconceptions or personal perceptions of healthcare providers around contraception (Paul et al., 2016), and the inadequacy of training, particularly for long-term and permanent contraceptive methods such as implants, IUDs and sterilization (Shumba et al., 2016). The inability or reluctance of providers to counsel clients on modern contraceptive methods based on their clients' contraceptive needs (either due to fears of side effects or their own beliefs about a method) as well as the lack of skill required in providing certain methods, therefore reduces the range of options available to potential clients. Furthermore, if clients are not satisfied with or able to tolerate a certain method, they may discontinue contraceptive use altogether if healthcare providers are unable to offer them alternative options or effectively manage side effects, thereby increasing the risk of unintended or poorly-spaced pregnancies (Hyttel et al., 2012; Kibira et al., 2015; Lutalo et al., 2015). For adolescents and young adults, in particular, accessing contraception is problematic when providers either refuse treatment or are not properly trained to provide tailored contraceptive counselling (Adams et al., 2013; Nalwadda et al., 2010; Nalwadda, Mirembe, Tumwesigye, Byamugisha, & Faxelid, 2011). This will be described in more detail in section 2.5.6.

A lack of training for service providers and a shortage of skilled healthcare staff to meet the demands of clinics further constrain equitable family planning service provision. From

providers' perspectives, the quality of family planning service provision could also be significantly improved if constraints at the health system level were addressed (Nalwadda, Mirembe, et al., 2011). These include the availability of different contraceptive methods in sufficient stocks, better management of staff workloads, the provision of adequate infrastructure, equipment and supplies (such as gloves and disinfectant), and better management of waiting times at the clinic (Mugisha & Reynolds, 2008; Ouma et al., 2015). Without sufficient time, supplies and training, providers often struggle to provide quality family planning counselling to their clients. Regulations on the services that providers can offer at different health centre levels further limit the range of contraceptive methods available to clients. For instance, HCIIs may only be able to offer short-term family planning methods, forcing clients to be referred to an HC III or a hospital if they require long-term methods, which subsequently pose the aforementioned challenges around travel, distance, time and costs (Shumba et al., 2016). The provision of long-term methods then becomes problematic; IUDs and implants are not stocked in clinics where there are no trained staff to administer them, and providers do not have the opportunity to gain training and confidence in providing these methods when they are not routinely offered by the clinic (Mugisha & Reynolds, 2008; Willcox et al., 2019).

Providers also struggle with patriarchal, societal and gender norms that may disrupt the proper and sustained use of contraceptives by their clients. These include the preference for large families, partner opposition (and therefore clandestine contraceptive use by women), discontinuation due to poor compliance or fears of side effects, and myths about the harms of family planning methods that often spread through rumours and informal networks in the community (Mugisha & Reynolds, 2008; Shumba et al., 2016).

Finally, the lack of financial incentives results in poor service provision and low motivation of healthcare providers, particularly among VHTs (Shumba et al., 2016). A study by Pitorak et al.

(2014) found the influence of money to be important in impacting the way healthcare providers performed at their jobs. While some providers were incentivized by the fees charged at private clinics, others would also offer services to garner additional income, regardless of whether they were qualified or not to provide these services.

2.5.7 Obstacles faced by young people around contraceptive use and accessibility

Young people in Uganda face an additional set of challenges when it comes to inequities in access and uptake of contraceptives due to gender, age, marital status, HIV status and poverty. Traditional socio-cultural and gender norms frown upon the use of contraception by adolescents and young, unmarried adults, and by married couples who have no children (Adams et al., 2013). Though premarital sex is common, it is not always socially accepted, and as a result young people are often judged harshly or stigmatised if and when they seek out contraceptive services (Nalwadda et al., 2010; Paul et al., 2016). Paternalistic and judgemental reactions, reluctance and a lack of trust and sense of privacy from service providers further hinder young people from utilising these services. In many instances, service providers also refuse to provide young people with contraceptives unless parental consent is obtained, considering it to be 'morally unacceptable' (Nalwadda et al., 2010; Paul et al., 2016). Many service providers themselves harbour misconceptions about the effects of contraceptives on fertility if young people start using them early in life, and instead encourage abstinence or discourage young people from having sex, rather than provide contraceptive services (Paul et al., 2016). At most, a minority of providers may choose to give out condoms to young people (Nalwadda, Mirembe, et al., 2011). Family planning services therefore hardly cater to the needs of young people, both in terms of contraceptive method availability as well as the provision of contraceptive counselling.

Health system constraints are yet another barrier faced by young people. The limited variety of methods to meet the different contraceptive needs of young people (such as EC pills) (Nalwadda, Tumwesigye, et al., 2011), as well as frequent stock-outs in clinics and the lack of trained providers to dispense long-term methods are some of the obstacles to contraceptive uptake that young people face as well. In addition to the poor or inconsistent service provision both in private and public health clinics, the infrastructure of some clinics do not offer a sense of privacy for younger clients (Nalwadda, Tumwesigye, et al., 2011). Together with travel time and costs, method costs (in private clinics), distances and long waiting times, these issues further hinder young people as they often have less spending power and are more stigmatised for visiting family planning clinics (Nalwadda et al., 2010; Nalwadda, Mirembe, et al., 2011) .

In a study on the influence of gender norms on the sexual and reproductive health behaviour of adolescents (aged between 10-19 years), Adams et al. (2013) report that traditional ideas about masculinity and femininity also exist among younger members of society in Uganda, such as the man of the house being the 'provider' and the woman being the 'caretaker'. Interestingly, male participants used the word 'nurturer' to describe an ideal woman and 'provider' to describe an ideal man, while female participants used both the words 'provider' and 'nurturer' to describe an ideal woman, highlighting a difference in the way gender roles are perceived by younger women and men. Additionally, strong societal norms pressure young, newly married couples to have a child within their first year of marriage, with relatives often shaming the couple if they do not follow the tradition. It is notable, however, that more young people are resisting this pressure and thinking about smaller, well-spaced families, particularly in terms of health and economic benefits (Adams et al., 2013; Nalwadda et al., 2010). Nonetheless, other barriers described before such as fears and misconceptions around contraception side effects, the stigma of promiscuity, gender inequalities, male-centric decision-making, and partner opposition (particularly in cases when the male partner is much

older, and a younger woman has difficulty in negotiating contraceptive use) prevail among adolescent populations as well (Nalwadda et al., 2010; Paul et al., 2016).

2.6 SUMMARY

Uganda has seen commendable advances in maternal and reproductive health over the last few decades. Though its MDG targets for maternal health were not met by the year 2015, there have been substantial reductions in maternal mortality and morbidity, strengthening of the health system and improvements in reproductive health and family planning service provision. Through a combination of effective program implementation, supportive policy commitments and cooperative private partner engagement, the access, affordability and availability of family planning services across the country has increased.

Despite these achievements, high fertility rates and unmet need for contraception remain a challenge in Uganda, more so in some regions of the country compared to others. As the preceding literature review has highlighted, a myriad of factors and barriers can contribute towards unmet need; these include gender, socio-cultural and community norms, partner opposition and/or limited male involvement with contraception, myths, stigma and fears around contraceptive use, and challenges around geographical and financial accessibility, availability and quality of contraceptive services.

It is important to acknowledge that individuals' motivations and challenges around contraceptive use are dynamic, complex, and likely to change over time due to changing needs and preferences, and in response to evolving socioeconomic, familial and societal circumstances. Hence in order to effectively address current unmet need, a contemporary understanding of the determinants of women's and men's contraceptive attitudes, intentions and behaviour is essential, situated within the larger context of Uganda's family planning

programs, policies and health system. Addressing these knowledge gaps in the current literature while contributing new insights toward future family planning policy and practice are predominant motivations for the research in this thesis. The research aims and questions outlined in section 1.4 are structured around an initial analysis of contraceptive use and unmet need at the country level, followed by an in-depth exploratory enquiry into the enablers and barriers of contraceptive use in the Busoga region, where unmet need remains high. The next outlines the research methodology and methods that were used in this project.

3 METHODOLOGY AND METHODS

3.1 INTRODUCTION

In their review paper on understanding the links between gender and reproductive health in various African contexts, Schatz and Williams (2012) advocate for the mixing of research methods (quantitative and qualitative) in order to obtain a more complete sense of the stories behind population data. The aim of this project is essentially similar; to discern population-level changes in contraceptive use in Uganda, and to explore the reasons for these changes among particular population subgroups. In order to successfully achieve this, a mix of both quantitative and qualitative methods was essential. As Morse (2010, p. 340) states, "researchers consider mixed method design to be a way […] to encapsulate quantitative variables with phenomena that cannot easily be quantified in the same project". This was, in short, the main motive for a mixed methods approach in this study.

This chapter describes the methodology and methods used in this project, and provides the rationale for the use of a mixed methods approach, in particular an explanatory sequential design. This chapter also explains the theoretical assumptions I drew on when conceptualising and designing this study, particularly the pragmatist and feminist paradigms. The last section of this chapter delves into the specific methods used for the quantitative and qualitative phases of this study, the community consultation process, my position statement as a researcher, as well as considerations of ethics, trustworthiness and rigour.

3.2 THE CASE FOR A MIXED METHODS APPROACH

Public health research has traditionally relied on quantitative approaches. However, combining quantitative and qualitative methods into a single mixed methods study has gained traction and recognition as its own unique and distinct type of research methodology in more recent times (Biddle & Schafft, 2014; Creswell, Klassen, Plano Clark, & Smith, 2011). Mixed method approaches offer a holistic analysis of health problems by combining the breadth, generalizability and representativeness of quantitative methods, with the complementary, deeper understanding that qualitative methods offer (Tariq & Woodman, 2013).

The typical approach of a mixed methods research study is one that involves the collection and analysis of both quantitative and qualitative data within the same study (Creswell & Creswell, 2018). These data are then integrated in the course of the study, with the idea that combining the two methods provides a richer understanding and analysis of a research problem than just one of the methods alone. Quantitative and qualitative approaches can also be used to address different aspects of a research question, providing a more comprehensive understanding by complementing each other (Woolley, 2009). Quantitative data can offer a wider context of analysis in terms of overall data trends or broader, generalizable analyses to qualitative data, which could be in the form of words or pictures. Alternatively, qualitative data such as narratives and experiences can add context and meaning to numerical or descriptive data (Johnson & Onwuegbuzie, 2004).

While the establishment of the field of mixed methods research has been as recent as the late 1980s, its beginnings date back to the late 1950s, starting with the notion that "all methods had bias and weaknesses, and the collection of both quantitative and qualitative data neutralised the weaknesses of each form of data" (Creswell & Creswell, 2018, p. 14). The concept of *triangulation* - the use of more than one research method in order to validate findings by cross referencing data from each method - stems from this 'convergence' of both qualitative and

quantitative approaches (Creswell, 2014; Glanz, Rimer, Viswanath, & Francisco, 2008; Thurmond, 2001). Further, in recognising the importance of providing a clear rationale and justification for mixed methods research, a number of reasons have been put forward by researchers in favour of combining two methods in one study. One example is provided in the pivotal paper on the rationale for conducting mixed methods studies by Greene, Caracelli, and Graham (1989) based on the analysis of 57 mixed method evaluation studies. They identified five key motives for conducting a mixed methods study: complementarity, triangulation, initiation, development, and expansion (Greene, Caracelli, & Graham, 1989). In a more recent review of 232 mixed methods studies, Bryman (2006) proposed that one of the more critical reasons for mixing quantitative and qualitative approaches was the concept of enhancement, which he posited relates to complementarity. Complementarity refers to the "elaboration, enhancement, illustration, clarification, of the results from one method with the results from the other method" (Greene et al., 1989, p. 259).

However, mixed methods are not without criticism. Mixed methods research often requires additional time, expertise and costs to undertake and integrate methodologically different studies to a high quality (Johnson & Onwuegbuzie, 2004). One of the other main points levelled against applications of this methodology is the practice of many researchers embedding the approach within a positivist paradigm. Giddings and Grant (2006) argue that this moves away from the value of combining the strengths of quantitative and qualitative research and the tenets of more qualitative paradigms such as constructionism or subjectivism. This is often the case because such qualitative worldviews may offer contradictory or interpretive perspectives that are context-dependent and reliant on the researcher's positionality in the research study. In her paper titled 'Mixed-methods research: Positivism dressed in drag?' Giddings (2006, p. 202) also critiques the "marginalization of methodological diversity when normative descriptors are used for qualitative and quantitative research", highlighting the assumption that combining

qualitative and quantitative methods promises “the best of both worlds”. She argues that this assumption instead diminishes the distinctions within qualitative and quantitative methods and thereby devises research designs that could unwittingly favour a post-positivist position. Instead, she proposes a more co-operative inquiry, combining mixed methods through rigorous and thorough research with careful planning that recognises and considers the underlying methodological and theoretical assumptions informing the design, methods and implementation of the research (Denzin & Lincoln, 2011; Giddings, 2006). Hence it remains essential the researcher take such considerations into account when carrying out a mixed methods study.

Several designs of mixed method studies exist in the field, as outlined by Creswell (2018, p. 15). Convergent parallel mixed methods research collects data simultaneously using two or more methods, and merges these to provide a comprehensive understanding of the research question. Explanatory sequential mixed methods takes the approach of quantitative research being conducted and analysed first, followed by qualitative research to then better explain and understand these findings. Exploratory sequential mixed methods are the reverse of explanatory sequential mixed methods where qualitative data is first collected and subsequently used to guide and frame a follow-up quantitative study (Creswell & Creswell, 2018).

The rationale for using an explanatory sequential mixed methods approach in this project draws on the ideas of *complementarity* and *development*. I felt that quantitative and qualitative approaches would complement and build on one another to offer a richer description and better understanding of contraceptive behaviour among women and men in Uganda, more so than using either approach on its own (Creswell & Creswell, 2018). Furthermore, given the ready availability of nationally-representative Uganda DHS surveys for the years 1995-2016 and a scarcity of papers or reports that have analysed both women’s and men’s data over this period, quantitative data provided an appropriate starting point for the study. This data was used for

the initial broader analysis of changes in contraceptive use over time, and current predictors of contraceptive use among women and men in Uganda. From the 2016 Uganda DHS dataset, the Busoga region of east Uganda was identified as having relatively high unmet need for contraception relative to other regions within the country. Following an explanatory sequential approach, these findings then informed the content and direction of the subsequent qualitative enquiry in two urban and rural districts in the Busoga region (Iganga and Luuka), to gain an in-depth understanding of unmet need and contraceptive use among women and men in this region.

3.3 THEORETICAL ASSUMPTIONS

Despite the increasing acceptance of mixed methods research as a "third methodological movement" (Tashakkori & Teddlie, 2003, p. 5), at times it is still challenged as being discordant on the basis that quantitative and qualitative approaches are grounded in different paradigms, which are based on distinct ontological and epistemological assumptions (Sale, Lohfeld, & Brazil, 2002). Nonetheless, there has been increased consensus that a mixed methods approach could work in a single study if researchers are explicit in detailing which paradigms frame the philosophical and theoretical underpinnings that inform their research (Dures, Rumsey, Morris, & Gleeson, 2011; Shannon-Baker, 2015). The next section describes the ways in which pragmatist and feminist paradigms are used within this project, in order to provide a better understanding of the epistemological foundations and influences guiding this research.

3.3.1 Pragmatism

The pragmatist paradigm is an epistemological position that considers knowledge and meaning to be determined by its practical implications and context (Lewis-Beck, Bryman, & Liao, 2004). Pragmatism focuses on developing relatable, realistic responses that address philosophical dualisms, such as the nature of reality and truth (Johnson & Onwuegbuzie, 2004; Patton, 2002). In the social sciences, this often comes up in the dualism between the realism paradigm (there exists a single, external reality that can only be understood through objective enquiry) that aligns with quantitative approaches, and the constructivist paradigm (multiple realities can exist, based on subjective understandings of differing contexts) that supports qualitative inquiry (Cornish & Gillespie, 2009; Creswell et al., 2011; Johnson & Onwuegbuzie, 2004; Patton, 2002). Pragmatists renounce these dualisms and posit instead a stance of pluralism, where different forms of knowledge serve different purposes, rather than being in direct competition or opposition (Creswell et al., 2011). From a pragmatist standpoint, knowledge is created, understood, and appreciated in the context of action and application, and is a 'tool for action' rather than a 'representation of reality', as described by Cornish and Gillespie (2009, p. 802). Pragmatism therefore poses the question: 'does this knowledge serve a purpose in this context?' rather than 'does this knowledge reflect reality?' (Cornish & Gillespie, 2009).

Because of its pluralist acknowledgement and acceptance of multiple existing types of knowledge, pragmatism has often been considered an ideal philosophical basis for mixed methods research. Further, pragmatism is positioned as being critical, non-relativist and action-oriented (Cornish & Gillespie, 2009), in the way that knowledge is seen as being contextual, to be used towards actionable outcomes which can then be evaluated within that chosen context. It postulates that there is no 'one truth' but rather a relative, contextual truth within a particular time frame, space and setting. However, pragmatism is not without some drawbacks.

These include an often larger emphasis on incremental changes rather than fundamental or structural change in society, due to the practicality of the stance, as well as a greater focus on applied rather than basic research (Johnson & Onwuegbuzie, 2004).

Given that this study is based on the real world experiences of women and men in Uganda and seeks to explore and understand the enablers of, and barriers to contraceptive use, a pragmatist view is drawn upon in both designing the study and analysing the data. This is in order to recognise that the findings in this project are contextual, and knowledge and experiences are based on the realities of participants in this study setting. Given the large focus on women's experiences of unmet need for contraception in this study as well as men's perspectives of family planning, the irrevocable reliance on the topic of gender requires a perspective that recognises how family planning is enmeshed with the construction and maintenance of gender norms. In this thesis, a feminist paradigm is applied to guide, justify and ultimately understand the scope of the research questions in their entirety.

3.3.2 Feminism

Feminism, as an epistemology, recognises the influence of gender, gender norms, gendered experiences and ways of thinking on that which one considers to be knowledge and meaning (Anderson, 1995). Often this is understood as research focusing on women and different aspects of their lives and experiences (Hesse-Biber, 2010). A focal point of feminist research is acknowledging the subordinate or oppressed position of women relative to men in many contexts, particularly where dynamics of power, discrimination and emancipation are at play. A further hallmark of feminist research has been the focus on the woman's 'voice' and issues that are important to women, such as women's health. However, researchers have also cautioned against viewing feminist research as being solely 'on, for and about women' as this

essentially excludes men's role in women's issues (Hesse-Biber, 2010). It is important to recognise that using gender as a construct of analysis extends beyond just women to also include men and other gender groups as an influential element in gender relations, norms and experiences (Varcoe, 1998).

Feminist perspectives in public health research have garnered increased recognition and acknowledgement over the last decades. That gender and associated hierarchical power structures in relationships and society are important social determinants of health is well established, particularly in sexual and reproductive health (Keane, 2014). In addressing inequitable healthcare access, particularly for women, a feminist perspective highlights gender relations, gender bias and gendered norms as being key factors of influence (Hammarstrom, 1999). Furthermore, the feminist paradigm accounts for the diversities of women's experiences based on age, race, class, religion, sexual orientation and geographical location, among other factors, which are important in acknowledging that the intersectionality of gender with other aspects of identity can affect women's health-seeking behaviour (Keane, 2014).

A growing body of literature has focused on feminism in different African contexts. While earlier works were largely a critique of Western notions of feminism being applied to different African settings (Lewis, 2001), more recent literature has focused on issues such as male privilege and harmful notions of masculinity in African societies, recognising that gender hierarchies and inequalities in family and society are common to both African and Western feminism (Atanga, 2013). Many traditional African feminists situate women's positions as family-oriented, and in relation to their roles as mothers. African feminism, however, has been critiqued for implying that all women in Africa face similar problems, despite countries, communities and cultures being so diverse within and across the continent (Mbabuike, 2002).

Given that the design of this study takes into account women's and men's gendered opinions, experiences and lived realities around contraceptive use and reproductive health behaviour in Uganda, it therefore very much relies on a feminist paradigm for direction. Since these are accounts and narratives from women and men in a largely patriarchal society, a gender lens is important in analysing and interpreting the research findings, particularly in recognising the gender and socio-cultural norms that exist in Uganda.

For the reasons described above, I feel that both pragmatism and feminism are important epistemological foundations and are at the root of many of the theoretical assumptions that this study draws on. However, I make a case for pragmatism and feminism being considered as intersectional rather than mutually exclusive ways of thinking about the research. In a paper on the intersection between pragmatism and feminism, Duran (1993) opines that both pragmatism and feminism put forward a set of everyday practices as a way of life, through which world views and ways of thinking and knowing arise and are subsequently established. She recognises the importance of an individual's experience of life in being a formative basis to what one knows and thinks, and cites this as being a core commonality to both paradigms. In this study, women and men's lived experiences and realities are questioned and explored, which at the individual level may be different when compared to the societal level, and is an important consideration given Uganda's collectivist society. The values of both the pragmatist and feminist paradigms will therefore be equally important yet unique in their respective influences and lens of analyses and understanding they provide for this study.

3.4 METHODS

Following an explanatory sequential mixed methods approach, quantitative data from the Uganda DHS was first analysed to present a broad, national level overview of contraceptive use in Uganda, how this has changed in the 21 years between 1995 and 2016, and current predictors of contraceptive uptake among women and men. Qualitative data obtained through FGDs and interviews were then obtained and analysed to gain a more in-depth understanding of the contextual factors and barriers that determine contraceptive behaviour among women and men. The aims at each stage of the mixed methods approach and sequence of data collection are shown in Table 3.1.

Table 3.1: Data sources and methods employed in this study

Research aim	*Method and source of data*
Analysis of changes in contraceptive use among women and men in Uganda over time (1995-2016)	Quantitative data from Uganda DHS (five data sets from 1995-2016); descriptive and weighted logistic regression analyses, accounting for interaction effects over time
Identification of current predictors of contraceptive use among women and men in Uganda	Quantitative data from 2016 Uganda DHS dataset; bivariable and multivariable logistic regression analysis, multicollinearity analyses, 10-fold cross-validated area under the receiver operating characteristic curve
Identification and analysis of cultural and contextual factors and barriers to women's contraceptive use	Thematic analysis of data obtained through FGDs with women in the Busoga region
In-depth analysis of men's roles, perceptions and experiences with family planning	Thematic analysis of data obtained from in-depth interviews with men in the Busoga region

The social-ecological model derived from Bronfenbrenner's Ecological Framework for Human Development (1979) guided the consideration of demographic and predictor variables for the quantitative analyses, and the development of the question schedule for women's FGDs in the qualitative phase (Figure 3.1). The model considers a systems-thinking approach and has been used in several contexts to design health promotion programs and interventions that account for multi-level determinants of health behaviour (Israel, Checkoway, Schulz, & Zimmerman, 1994; McLeroy et al., 1988; Stokols, 1996). As the preceding literature review demonstrated, it is important to recognise the interaction of enablers and barriers of contraceptive use at different levels of influence - individual, familial, societal and national - given that individuals are part of a larger community and health system, as well as an overarching economic and social structure. For example, contraceptive use can be impacted by education and decision-making autonomy at the individual level; by gender norms and discordant fertility desires at a relationship level; by community beliefs about contraception at the societal level; and by the accessibility of the health system at the national level, as depicted in the figure below.

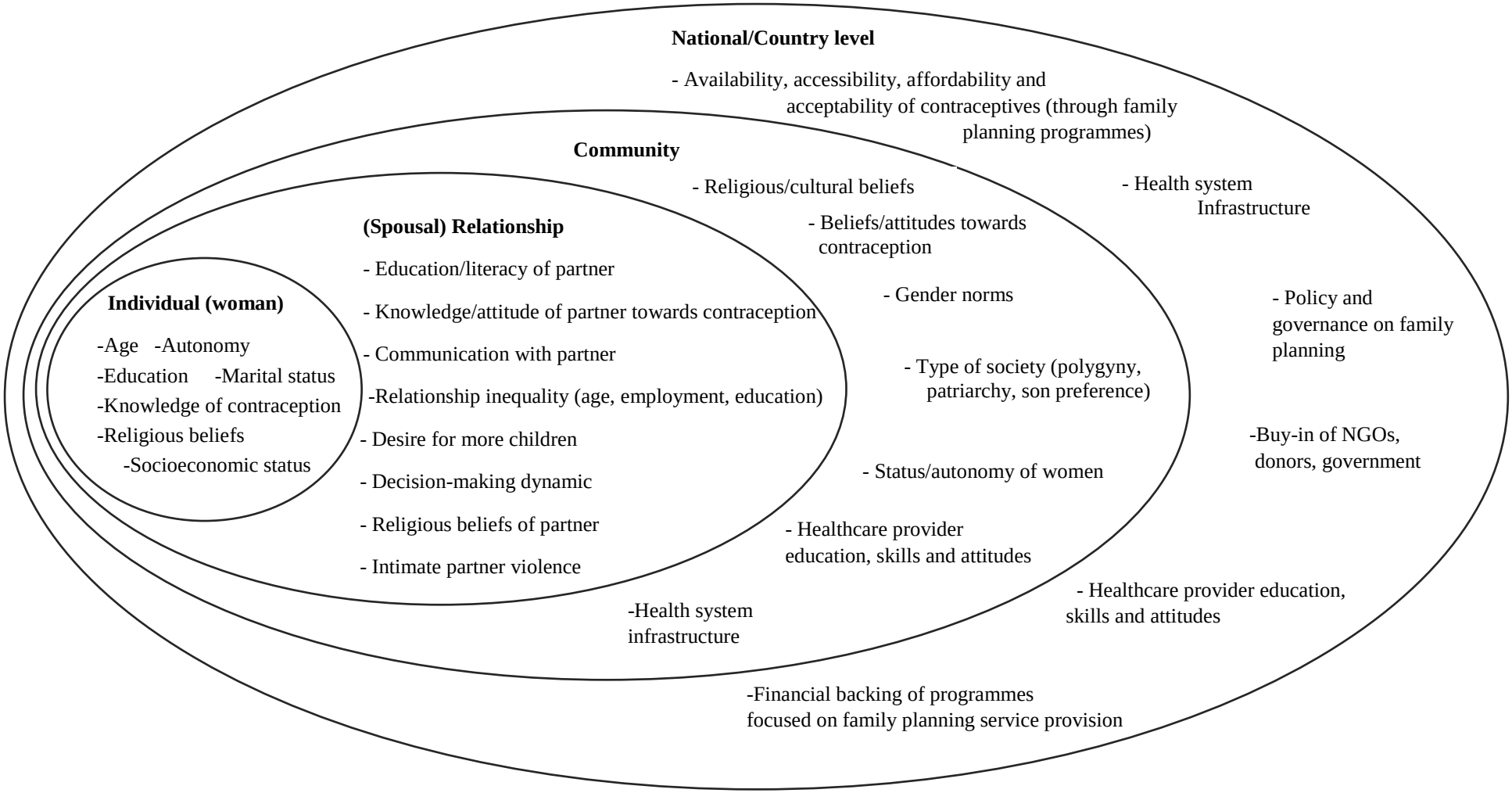

Figure 3.1 The social-ecological model adapted in this study, for enablers/barriers to contraceptive use at different levels of influence

3.5 QUANTITATIVE PHASE

3.5.1 Study designs and participants

The quantitative phase of this project comprised of two separate but related studies. The first study looked at changes in contraceptive use over time among women and men of reproductive age in Uganda. The second study sought to ascertain current predictors of contraceptive use among women and men in Uganda, using data from the 2016 Uganda DHS. Both studies were based on a secondary analyses of DHS datasets, which employ a stratified (urban/rural) two-stage cluster design. The first stage of data collection involves enumeration areas (EAs) initially being randomly selected from the most recent population census sample frame; each EA covers a geographical area with an average of 130 households. The second stage involves the systematic selection of households from the EAs. The surveys use standardized questionnaires developed by the MEASURE DHS program specifically for women, men and households; these are administered during face-to-face interviews. Participants eligible for interview in DHS include all women aged 15–49 years and men aged 15–54 years who are residents of the selected household. By design, the sample populations for women and men are different, as women are interviewed in all sampled households while men are interviewed in one-third of all sampled households. Detailed information about sampling methodologies and data collection procedures can be found from the MEASURE DHS webpage (https://dhsprogram.com/data/), or DHS reports for respective countries (Westoff, 2006).

Demographic variables for age, education, religion, place of residence for women and men were used in the first study. In the second study, additional variables for wealth index, parity, religion, marital status, hearing about family planning through the media, discussing family planning with a health worker were included for women and men, with an additional three variables – if distance to the health facility was a problem; if getting money for treatment was

a problem; and, if getting permission to seek treatment was a problem – available for women. The definitions and response categories for each of these variables can be found in Table 3.2.

3.5.2 Statistical analyses

For both studies, reporting of analyses were informed by the STROBE guidelines (www.strobe-statement.org) (Von Elm et al., 2007). Analyses were undertaken separately on the women's and men's datasets, using specialist statistical software Stata SE version 15.1 and 16 for the two respective studies (StataCorp, College Station, TX, USA). Contemporary epidemiological parametric statistical regression models were employed throughout, after accounting for the DHS survey design and associated population weightings.

In the first study, weighted binary bivariable and multivariable logistic regression analyses were performed to analyse the associations between any and modern contraceptive use, and selected demographic variables. Interaction effects over time were also assessed as the primary aim of this study was to track differential changes in contraceptive use over time for women and men. In the second study, bivariable and multivariable binary logistic regression models were employed to identify predictors of contraceptive use through any significant associations with selected predictor variables. Forward and backward stepwise selection techniques were employed to identify the most parsimonious final multivariable models for women and men. Predictive abilities were assessed via 10-fold cross-validated area under the receiver operating characteristic curves (AUCs). More detailed and specific descriptions of the statistical analyses carried out for each study can be found in the relevant results (Chapters Four and Five).

Table 3.2. Original DHS variable categories and groupings for predictor variables used in the quantitative studies.

Predictor variable	*DHS variable categories*	*Groupings used in this study*
Age	15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49 years (and 50-54 years for men only)	15-24, 25-34, ≥35 years
Highest education level	No education, primary education, secondary education, higher	None, primary education, secondary education or higher
Wealth index*	Poorest, poorer, middle, richer, richest	Poor (poorest, poorer), middle, rich (richer, richest)
Parity	0,1,2,3,4,5,6,7,8,9,10,11,12,13,14	0, 1-3, 4 children or more
Region	Kampala, Central 1, Central 2, Busoga, Bukedi, Bugishu, Teso, Karamoja, Lango, Acholi, West Nile, Bunyoro, Tooro, Ankole, Kigezi	Central (Kampala, Central 1, Central 2), East (Busoga, Bukedi, Bugishu, Teso), North (Karamoja, Lango, Acholi, West Nile), West (Bunyoro, Tooro, Ankole, Kigezi)
Place of residence	Urban, rural	Urban, rural
Religion	No religion, Anglican, Catholic, Muslim, Seventh Day Adventist, Orthodox, Pentecostal/Born Again/Evangelical, Baha'i, Baptist, Jewish, Presbyterian, Mammon, Hindu, Buddhist, Jehovah's Witness, Salvation army, Traditional, Other	Christian (Anglican, Seventh Day Adventist, Orthodox, Pentecostal/Born Again/Evangelical, Baptist, Presbyterian, Salvation Army), Catholic, Muslim, other (No religion, Baha'i, Jewish, Mammon, Hindu, Buddhist, Jehovah's Witness, Traditional, other)
Marital status	Never in union, married, living with partner, widowed, divorced, separated	Unmarried (never in union), married or living together, separated/divorced/widowed
Heard about family planning through the media (TV/radio/newspapers)	No, yes	No, yes
Discussed family planning with a health worker in the last few months	No, yes	No, yes
If distance to the health facility is a problem	No problem, big problem, not a big problem	No (no problem, not a big problem), yes
If getting money for treatment is a problem	No problem, big problem, not a big problem	No (no problem, not a big problem), yes
If getting permission for treatment is a problem	No problem, big problem, not a big problem	No (no problem, not a big problem), yes

*****The DHS variable wealth index is used as a proxy for socioeconomic status, and is a composite measure of a household's cumulative living standard. The wealth index is calculated using easy-to-collect data on a household's ownership of selected assets, such as televisions and bicycles; materials used for housing construction; and types of water access and sanitation facilities (Uganda Bureau of Statistics, 2018).

3.6 QUALITATIVE PHASE

3.6.1 Study design and methods

Qualitative data was obtained in two phases. The first phase of qualitative data collection was captured through FGDs with women, which is described in more detail below. Additionally, given the importance and influence of healthcare providers in decisions made by women and couples around contraception, twenty semi-structured key informant interviews were conducted with healthcare providers and managerial staff at health clinics and/or district hospitals at the different study sites. The findings from the interviews with service providers are not reported or discussed in this thesis, due to the space and time constraints of this project. However, key insights were produced in a needs-assessment report for service providers and implementing partners in the Busoga region (Namasivayam, Lovell, & Schluter, 2018). These interviews provided an important contextual understanding of family planning service provision in the region. Some of the themes identified were around the regularity of stock-outs, the barriers faced in accessing various tiers of health services, and service providers' observations of men's engagement with these services. Providers also encountered many women whose partners were opposed to contraceptive use. This information influenced the question schedules in the second qualitative phase, thereby grounding the study in the health system challenges present within the region.

A dearth of background literature on men's involvement in family planning also motivated pilot FGDs with men in the first qualitative phase, in order to gain an initial overview of men's knowledge and attitudes about contraception, and their experiences around male involvement in family planning. The data from these pilot FGDs, together with themes around partner opposition and a lack of male involvement in family planning that emerged from the FGDs with women and interviews with service providers, informed the decision to conduct

individual, in-depth interviews with men in the second phase of qualitative data collection. The aim of this phase was to further explore men's family planning decisions and uptake.

The qualitative methodology followed in this thesis was shaped by Braun and Clarke's approach to thematic analysis (Braun & Clarke, 2006), which influenced sample size considerations for the FGDs, the goals of thematic saturation as well as the language used in presenting the findings of the analyses. Thematic analysis is a well-established method of analysis, but is less recognised as a qualitative methodology. While Braun and Clarke's work is heavily influenced by feminist approaches, it also falls into the category of a generic qualitative (interpretive) approach that "is not guided by an explicit or established set of philosophic assumptions in the form of one of the known (or more established) qualitative methodologies" (Caelli, Ray, & Mill, 2016, p. 4) such as grounded theory or phenomenology. Generic approaches are able to work when elements from different methodologies are blended into a new methodology, or combined while retaining the specific elements of the different methodologies, such as in the case of mixed methods. However, if not constructed with sound methodological focus, such approaches risk lacking coherence and congruence, and are critiqued for 'method-slurring' (Kahlke, 2014). Further rationale for the use of thematic analysis as a method and the steps followed using this approach are elaborated in section 3.6.3.

3.6.1.1 Focus group discussions

Focus groups offer the advantage of being able to explore a diverse range of opinions and experiences of a group through the interaction of its participants, known as the 'group effect' (Carey & Smith 1994). Rather than interviewing participants individually, discussions within groups provide a platform for 'piggybacking' and building on one another's opinions, adding to the richness of data gathered as well as allowing for sharing and comparison of different

points of view, and areas of group consensus or disagreement (Leung & Savithiri, 2009). Furthermore, since FGDs are facilitated by researchers, the direction of the conversations, the types of questions asked and the level of detail to which a particular topic is discussed is within reasonable control of the researchers, allowing them to delve deeper, explore and/or question these topics further (Morgan, 1996). Focus groups also work well in instances when participants are reluctant to be interviewed on their own, or feel they have nothing to contribute as an individual (Kitzinger, 1995).

The structure of focus groups and their reliance on facilitated discussion can sometimes be a limitation, in that the quality and extent of the discussions and data gathered is very much dependent on the skills of the facilitator. This is also true for their ability to engage all members in the group to participate rather than have one or two participants dominate the conversations, while at the same time being mindful not to steer the group's discussions to the point where it becomes unnatural or forced. Since discussions on several themes or topics can take place concurrently within a FGD, the amount of data gathered can be substantial, and therefore field notes and audio recordings are necessary to ensure that all the salient discussion points are captured accurately and comprehensively.

Given the nature of the topic of contraceptive use and behaviour in this study, focus groups rather than interviews were selected as the initial qualitative method in order to capitalize on the strengths of the method mentioned above. It was deemed particularly essential that participants had the option to explore, hear and build on each other's views and experiences, and that the group interaction could generate richer discussions and detail pertaining to the topic. It was also hoped that a variety of viewpoints and opinions, at times conflicting, would emerge so that the breadth of the topic could also be explored. As stated in Kitzinger's paper (1995) on focus group methodology, FGDs have also been shown to more effectively explore social attitudes on a topic of interest, as people tend to feel more comfortable talking about

such topics in among a group of people with similar experiences. Focus groups have also previously been used in qualitative research around contraceptive use and reproductive health behaviour among women and men in Uganda (Bell & Aggleton, 2013; Kaida et al., 2005; Morse et al., 2014).

A total of six FGDs were conducted with women, stratified across age groups (18-24, 25-34 and over 35 years) and place of residence (urban and rural areas) (Figure 3.2-3.3). Three pilot FGDs were conducted with men (Figure 3.4). The main objectives of the FGDs were to identify the contextual and cultural factors and barriers that influence and/or prevent contraceptive use among women of reproductive age in the Busoga region. Age groups were selected based on literature that has reported significant differences in contraceptive uptake associated across these age brackets (Asiimwe et al., 2014; McGuire & Stephenson, 2015). All urban FGDs were conducted in the Iganga district, and all rural FGDs were conducted in the Luuka district, over a six-week period of fieldwork.

Figure 3.2. A woman's FGD in the rural district of Luuka

Figure 3.3. A woman's FGD in the urban district of Iganga

Figure 3.4 A pilot FGD with men in the district of Iganga.

Each focus group comprised of between six to eight respondents, and included both users and non-users of contraception who fit the criteria as described below. This sample size was chosen based on suggestions from literature on FGDs, recommending group sizes of four to eight or six to ten participants in order to maximize group interaction dynamics (Holloway, 2005; Rabiee, 2004).

Selection and recruitment of participants

Based on the WHO definition for unmet need (Section 1.3), female participants for the study were selected based on the following criteria:

Inclusion criteria

- Women aged between 18-44 years, unmarried or married
- Women who were fecund and sexually active
- Women who wanted to space or limit a pregnancy at the time of the study (irrespective of whether they were using or not using traditional/modern methods of contraception).

Exclusion criteria

- Women aged below 18 years, or 45 years and over
- Women who were not sexually active
- Women who were pregnant, or were trying to conceive at the time of the study.

For the FGDs with men, participants were selected based on the following criteria:

Inclusion criteria

- Men aged between 18-54 years
- Men who were sexually active (unmarried or married)
- Men who were currently using or not using a method of contraception

Exclusion criteria

- Men aged below 18 years, or 55 years and over
- Men who were not sexually active.

Study sites in the districts of interest (Iganga and Luuka) were selected based on low contraception prevalence rates, accessibility and feasibility. Participants were recruited through purposive and convenience sampling with the help of community health workers and VHTs that worked at these sites. With guidance from the two local partner organizations and research assistants from the District Surveillance sites in Iganga and Luuka, community health workers were briefed on the nature and topic of the study, the inclusion and exclusion criteria for recruitment of participants, the number of participants required, as well as the date, time and location of the FGD in the respective district. They were given three to five days to then return to their respective communities and recruit participants.

On the day of the FGDs, the research team comprising of two facilitators and myself arrived early to set up the seating arrangements, as well as purchase and provide refreshments (as instructed by the local partner organizations). Once all the participants had arrived, the facilitators introduced themselves and the team in Lusoga, and then invited me as the researcher to say a few words about the study in English, which they then translated. I then took the participants through the information and consent process, and they subsequently signed the consent forms (or provided a thumbprint signature if they were unable to read or write) (Appendix C). Participants were also asked to complete an anonymous pre-discussion questionnaire on basic demographic information (age, level of education, district, number of children, current contraceptive method, etc.) (Appendix D). If participants were illiterate, the facilitator read out the questionnaire to them and assisted them to complete it. In order to mitigate any sensitivities during the FGDs, participants were fully informed of the topics that

would be discussed, both during their initial recruitment as well as before the start of the actual FGDs. They were given the opportunity to refrain from answering any questions they did not wish to, or leave the discussion if they did not wish to participate any longer. They were also assured of confidentiality and that participation in the FGD would not affect future care provided by their local family planning clinic or any other health services in their community.

The facilitators then proceeded with the FGD in Lusoga, following the question schedule (Appendix E), with one facilitator leading the discussion while the other took notes. The discussions were audio-recorded, and most discussions lasted between 45 minutes to 1.5 hours. They were held in private, quiet spaces, either in an empty school classroom or sub-county office, or in a secluded open space in the vicinity of the designated meeting place, where others in the community could not listen in or disturb the discussions. At the end of the FGDs, participants were thanked for their time and participation and given a bar of soap as *koha* (as instructed by the local partner organizations).

3.6.1.2 Individual interviews

As a research method, qualitative interviews have been described as 'conversations with a purpose', enabling a person's opinions and thoughts to be captured in his or her own words (Burgess, 1984, p. 102). Interviews offer flexibility and adaptability in the way they allow for the opportunity to explore and discuss individual attitudes, perceptions and experiences of a certain phenomenon - through asking 'how' and 'why' questions, in addition to 'what' (Holloway, 2005). Given that individual interviews often take the form of a free-flowing, engaged one-to-one conversation between a researcher and a participant, data and insights are gathered in an interactive and situational context. Interviews also allow for ways of describing

and attributing meaning to experiences or events, as well as nuances in tone, language, non-verbal cues to be explored in depth with a participant (Bauman et al., 2002).

Individual, in-depth interviews have been used widely in research around health and healthcare provision, in order to co-create and understand meaning with interviewees about their views and experiences with particular health-related experiences or events (DiCicco-Bloom & Crabtree, 2006). The purpose of the interviews often determine the structure they follow; if the objective is to uncover and learn about one's perspectives, attitudes and meaning, to better understand a phenomenon or generate a hypothesis, interviews tend to be semi- or unstructured (DiCicco-Bloom & Crabtree, 2006). However, it is necessary to bear in mind that while in-depth interviews are a rich source of pertinent data, these views do not seek to represent larger populations, and may be hampered by social or political sensitivities (Marshall, 1996). The quality of the interview also largely rests on the interviewer's ability to engage a participant and get him or her to 'talk' freely, while also actively listening to and interpreting the conversation and guiding it in a relevant direction. Interviews can also be a time-consuming method, requiring greater input in terms of transcription and analysis as the amount of data generated is often substantial (Bauman et al., 2002).

In-depth interviews rather than FGDs were chosen to further explore men's own perspectives about their roles in reproductive health as well as their attitudes and experiences around contraceptive use (or non-use), rather than relying group responses and consensus that were generated via FGDs. Interviews were also selected to understand and capture individual men's views about how the dynamics of gender relations played out with their partners regarding contraceptive decisions and use, given the paucity of such data in the context of Uganda.

Against the background of the socio-ecological lens, the information-motivation-behavioural skills (IMB) model was used to guide the development of the question schedule for the in-

depth interviews with men. The IMB model was first put forward by Fisher and Fisher in the mid-1990s as a framework of understanding factors that promote protective health behaviour in the context of the HIV epidemic (Fisher, Fisher, Misovich, Kimble, & Malloy, 1996). Since then, the model has gained much traction as a tool to design, implement and evaluate health promotion interventions, particularly around sexual behaviour and reproductive health (Fullerton, Rye, Meaney, & Loomis, 2013; Shumlich & Fisher, 2017). The model posits that there are three components that determine if a certain health behaviour is initiated and subsequently maintained: information, motivation, and behavioural skills (Fisher et al., 1996). While each of the three components can individually impact health behaviour, all three components work together in the initiation and sustainability of behaviour change (Figure 3.5). For instance, being knowledgeable about the importance of condom use in preventing unwanted pregnancies alone is insufficient to effectively protect oneself; one should be motivated personally (e.g. perceiving the relevance and benefit of condom use for oneself) and socially (e.g. considering condom use as an acceptable protective behaviour in one's community) as well as have the necessary behavioural skills to be able to use a condom (e.g. self-efficacy to put on a condom properly).

In this study, the IMB model was used to develop questions around men's levels of information, motivation and behavioural skills pertaining to contraception, and how these potentially impacted their contraceptive behaviour. Questions were open-ended and exploratory, with the intention of eliciting men's own knowledge, views and experiences with contraception. A copy of the interview question schedule can be found in Appendix I.

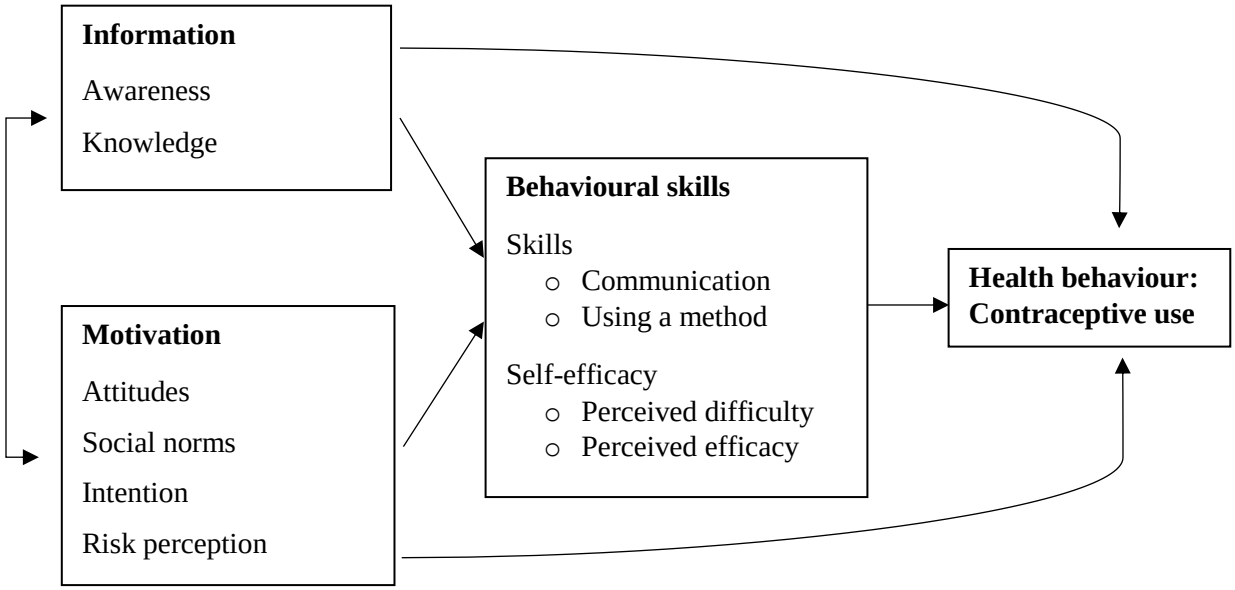

Figure 3.5. The information-motivation-behavioural skills model adapted for this study.

A total of 24 men, 12 from urban settings and 12 from rural settings (across six villages) were interviewed over a four-week period of fieldwork. Of the 12 men in each setting, six were contraceptive users, while the remaining six were non-users; this was purposefully selected for during the recruitment stage. The recruitment of participants was carried out through purposive, convenience sampling in the Iganga (urban), Luuka (rural) and Bugweri (rural) districts. Following the earlier recruitment process for FGDs, approximately three to five days before the interviews began community health workers and VHTs in these districts were briefed on the nature and purpose of the study, as well as inclusion and exclusion criteria for this stage of participant recruitment. The community health workers and VHTs subsequently identified appropriate men from their communities, informed them about the study, and set up a date and time for the interviews if they were willing to participate.

On the scheduled day of the interviews, I accompanied the community health workers to their respective communities, together with a facilitator, who was a staff member from the local partner organizations and a trained researcher who had conducted one-to-one field interviews

before (Figure 3.6). Once the interviewee was ready to begin, the facilitator introduced themselves and myself in Lusoga/English, and then invited me to say a few words about the study in English, which they then translated if necessary. The facilitator and myself then took the interviewee through the information and consent process, and they subsequently signed the consent forms (or provided a thumbprint signature if they were unable to read or write) (Appendix G). They were also asked to complete an anonymous pre-interview questionnaire on basic demographic information (age, level of education, marital status, number of children, etc.) (Appendix H). If participants were illiterate, the facilitator read out the questionnaire to them and assisted them to complete it. I then interviewed the men myself (if they were fluent in English) or the facilitator interviewed them in Lusoga, following the question schedule but keeping to a semi-structured format. Interviewees were given the opportunity to ask questions about the study and were informed that deciding to attend the interview would be their own choice and would not affect future care provided by the health services in their region. Interviews were audio-recorded and lasted between 30 minutes to an hour, with a few going beyond that period of time. Interviews were held mostly in a secluded space in the vicinity of the interviewee's house, where disturbances were minimal. At the end of the interview, participants were thanked for their time and participation and given a bar of soap as *koha*.

From observing the dynamic and body language between the facilitator and the respondents, both in FGDs and interviews, participants did not appear to be hesitant or unwilling to respond to questions, or to share their views or participate in the discussions (in FGDs). Most often there was banter and laughter, and many of the respondents smiled and chuckled at some of the questions. Only one male interviewee who was very opposed to contraceptive use was agitated and openly hostile during his interview, but still responded (albeit quite negatively) to all the questions asked.

Figure 3.6. An in-depth interview with a contraceptive user in the rural district of Luuka.

3.6.2 Cultural and community consultation

In recognizing that cultural and contextual factors needed to be duly considered in conducting fieldwork in Uganda, I worked closely with two local organizations in the Iganga district – WellShare International and the Uganda Health and Development Associates – in planning and subsequently organizing the qualitative data collection.

The local research team were consulted on the appropriate process and customs for organizing research activities such as FGDs and interviews. For example, in the cultural context of Uganda, it is usually considered respectful and important to inform the village heads or local community leaders of the intent to conduct a research study, as well as the nature and purpose of the study. It was largely an informal process, and the local partner organizations guided me

on the necessary and appropriate channels of consultation in the selected study sites. Similarly, *koha* were provided to participants but in accordance with the local customs, money was seen as a taboo. The local researchers advised me to instead offer bars of soap to participants, or in some cases, reimburse the travel costs they incurred for travelling to the FGD/interview. I was also taught how to greet and thank people in the local Lusoga dialect. Throughout the fieldwork process, I regularly consulted with the local research team on any cultural and social practices or linguistic nuances that I needed to be mindful of, and I asked them to alert me if I made any *faux pas*. Sarah Namutamba, the local fieldwork facilitator in Uganda, advised me on to conduct briefings for community health workers with regard to participant recruitment, and how to handle individual interviews in terms of greetings, introductions and local customs. She also provided me with cultural and contextual input in the data collection and analysis stages.

3.6.3 Thematic analysis

Qualitative data collected from the FGDs and interviews were analysed separately through thematic analysis, using an inductive approach. This method acknowledges how experiences are shaped by context, while retaining an emphasis on how informants make sense of and attribute meaning to their experiences. Thematic analysis also offers flexibility in data analysis, with the advantage that it is "not wedded to any pre-existing theoretical framework" and therefore can be used in most ontological and epistemological paradigms, as long as the researcher's theoretical position and assumptions in the research are clearly articulated (Braun & Clarke, 2006, p. 81). Thematic saturation was reached in both qualitative phases of the study. Once themes became repetitive and no new information was identified during the FGDs and interviews, data collection was stopped.

In thematically analysing the data, the six stages of analysis suggested by Braun and Clarke (2006) were followed. Data were primarily analysed at a latent level, and were first coded to identify patterns within and across the transcripts (Saldaña, 2009). Codes were organised into themes and sub-themes, representing patterns that were identified in the data, incorporating both latent and semantic content. Connections were subsequently built around the major themes that emerged pertaining to the use of contraception by women and men. The identified themes and their interpretation were discussed and evaluated by my primary supervisor and myself throughout the research process.

In the first stage of analysis, data were transcribed by either myself (when interviews were done in English) or translated and subsequently transcribed by members of the research team in Uganda who had previous experience with translating transcripts from Lusoga to English (for FGDs/interviews done in Lusoga). Confidentiality forms were signed by all translators for this purpose (Appendix K). Once translations had been completed, these were checked by Sarah Namutamba and another translator as part of the verification process. Transcripts were uploaded onto NVivo Pro version 12.1.1.256 (QSR International Pty Ltd, Vanguard House, London, U.K.), and I then read and re-read the transcribed data through several times to familiarize myself with the content.

The second stage proposed by Braun and Clarke was to generate initial codes and ideas from the data. In order to do this, any key words, phrases or general concepts in the transcripts that I considered related or relevant to the overall research question were highlighted and given a code in NVivo (examples of codes were ideal family size; contraceptive use for spacing; partner opposition to contraception, etc.). During the process of analysing all of the transcripts, I coded each idea under a pre-existing code or created new codes to capture new topics or ideas.

The third stage of analysis, once all the transcripts had been coded, was to organize the different codes into broader categories, which later became the basis for themes in the data. I did this by

examining the different quotes and pieces of data under each code, looking for common patterns and rearranging different strands of data that could fit under more than one code. Related or similar codes were grouped together to condense the number of codes and make the categories broader. By looking at relationships between codes and categories, potential code groups and categories that could be brought together were then identified and grouped together as possible themes.

The fourth stage of the thematic analysis was where themes were reviewed and refined in consideration of the entire dataset. At this stage, I talked through and presented the candidate themes to my principal supervisor, and together we revisited the codes and quotes within the different categories under each theme. Through discussions and questions around the data, the codes, categories and potential themes were reinterpreted, reorganized and refined in relation to all the transcripts in the dataset, as recommended by Braun and Clarke (2006). Some codes were removed due to duplication or not being a relevant or good fit within the broader categories and sub-themes across the data. I also drew up an initial thematic map in this phase.

The fifth stage of analysis revolved around the final definition and naming of themes. At this stage, I began a preliminary write-up of the chapter, and in outlining, explaining and analysing the different quotes, codes, categories and sub-themes under each theme, I further refined the entire thematic map to better fit the different data points and patterns in the data (Holloway, 2005). The writing process facilitated a more nuanced and deeper understanding of the codes, categories and themes derived from the individual FGDs and interviews, as well as how these different themes best represented and explained the data as a whole.

In the sixth and final stage of the analysis, I finalized the thematic map, the theme names and the chapter write-up. I wrote a complete narrative that explained and linked the different themes, together with specific quotes from participants which captured the essence of the sub-theme or theme they represented. These quotes were further analysed and interpreted within

the specific themes as well as in the overall context of the data and study setting. An important objective at this point of the analysis was to ensure that all sub-themes and themes were incorporated into the chapter in a way that "goes beyond description of the data, and makes an argument in relation to the research question" (Braun & Clarke, 2006, p. 93). I then circulated the integrated chapters to my supervisory team for their feedback and comments regarding the fit and coherence of the themes within the overall narrative and in consideration of the entirety of the data set and the original research question. These complete narratives form the basis of the qualitative results chapters for women (FGDs) and men (interviews) in the subsequent sections of this thesis.

3.6.4 Considerations of trustworthiness and rigour

Trustworthiness and rigour in qualitative work is often judged through the credibility, dependability, confirmability and transferability of a study, which extends to the methods of data collection, analysis and the interpretation of the research findings (Guba, 1981; Krefting, 1991). To ensure these considerations in this project, the respective question schedules were consistently used to guide FGDs and interviews across all instances of data collection. Transcriptions and translations of transcripts were also checked through separately by two independent translators as well as the facilitator and myself (if conducted in English). During the coding and thematic analysis process, my primary supervisor and I independently checked through and discussed the codes, categories, patterns and themes as they evolved over time.

Reflexivity, which describes the position of the researcher within the research as influencing, and being influenced by, the research process and outcome is another important consideration in qualitative research (Haynes, 2012). For my part as the researcher, a reflexive analysis of my thoughts, experiences and interpretations during the data collection and analyses was a key

component of the project. I did this by keeping a detailed field journal where I consistently recorded my own observations, feelings and thoughts during my fieldwork in Uganda, as well as during the subsequent data analyses stages of the project.

3.7 ETHICAL CONSIDERATIONS

For the quantitative analyses in this study, data were obtained from the DHS surveys, via request from MEASURE DHS on 31st May 2017 (Appendix A). The 2016 DHS dataset was available for download in March 2018. As part of the DHS survey methodology, data collection questionnaires and processes for the DHS surveys are reviewed and approved by the ICF Institutional Review Board (IRB). Additionally, country-specific DHS survey protocols are reviewed by the ICF IRB and by an IRB in the host country. As a part of the DHS ethics process, informed consent is obtained from all participants prior to their participation in the survey, and the collection of information is done confidentially. The datasets used did not carry any personal identifiable information and permission to use them was obtained from MEASURE DHS. Once a data request was approved by MEASURE DHS, it was deemed that no further ethical clearance was required for use of this data for research.

For the qualitative data collection (through FGDs and interviews) in Uganda, ethical approval was granted by the University of Canterbury Human Ethics Committee on 4th August 2017 and by the Mbarara University of Science and Technology Research Ethics Committee in Uganda on 10th October 2017 (Appendix B). For the second phase of qualitative data collection, an amendment to the initial ethics approval was granted by the University of Canterbury Human Ethics Committee on 12th November 2018. In recognizing that some of the questions and topics broached (pertaining to contraceptive use and sexual relationships) could be personal or sensitive, participants were provided with an information sheet (at the time of

the FGD or interview) which included my primary supervisor's and my own contact information, should they have follow-up questions or want to withdraw from the study. Participants were reminded that their participation was voluntary, that they could refuse to answer questions, and should not feel pressured to share information at any point, and that they were under no obligation to participate due to the local partner organization's assistance in the study. Participants were also assured of anonymity and confidentiality, and that their access and utilization of health services in the community would not be affected by their participation (or lack of) in any way.

3.8 POSITION STATEMENT

The idea behind this project began as an extension to an internship I did in eastern Uganda in 2016, where I evaluated a maternal health intervention in a rural community in Iganga. In the course of my fieldwork at the time, I learnt that Uganda has one of the highest fertility rates in SSA, and that contraceptives were not always available or accessible to women. Many women said they opted for injectable contraceptives if these were available, as these offered them the convenience of having to revisit the health centre only every three months to refill their prescriptions. They also explained that injectables offered them the possibility of hiding their contraceptive use if their husbands were opposed to family planning. For women who were within the six month postpartum period, breastfeeding was the main contraceptive method. Furthermore, many women talked about contraceptive methods and trained providers not always being available in the clinics closest to them, and that such method 'stock-outs' sometimes lasted for several weeks.

I have been fortunate to have lived in places where reproductive healthcare services have been readily accessible to women. My own beliefs are that, as a basic human right, women should

have a say in their reproductive health choices, whether it be to use contraception (or not), if/when they want to have children, and if so, how many. I also believe that women (as part of a couple) should be able to make these informed choices, and to varying extents this relies on having a partner and health system that allow, inform and support women to easily and effectively make such choices.

This project began with the intention to enable women in Iganga to have similar options of choice, through working with them, their partners, and local family planning service providers in their community to better address the challenges they currently face with contraceptive use and access. However, I acknowledge that as a female and foreign researcher who does not have children, my views and understanding of gender, societal and cultural norms and their influence on reproductive health choices will be very different from most Ugandan women. This position within the project also influenced the way women, men and service providers reacted to me, the questions I asked them, and my subsequent interpretation of their responses. It was important therefore that from the outset, I positioned myself not as someone telling them what to do or advising them on the best options in terms of contraceptives or family size, but rather as someone trying to learn and understand the processes and factors involved in their own reproductive health decisions.

As a Singaporean citizen of Sri Lankan heritage, and mixed Tamil and Malay ethnic origins, visiting from New Zealand, my status as a 'foreigner' in the Ugandan study sites and community where I lived during the time was very obvious right from the outset. Most people called me *mzungu* which is the Luganda term for 'white person', though I am not white. Curiously, I had one field assistant jokingly call me a 'half-caste', implying that I must have an African grandparent or distant ancestor. More interestingly, however, I was never considered to be a Ugandan Indian, though the population of Indians in Uganda is sizeable and I thought they were the group I would physically resemble most closely. Instead, most people

assumed I came from the United States of America (USA), and had not heard of New Zealand or Sri Lanka.

Faria and Mollett (2016) talk about 'the politics of whiteness in the field' in reference to the assumption that researchers of a different race, colour or culture can be in a position of power and authority over their research subjects, who remain inherently marginalised in the research process. I did not feel like this was the case in my research, for a few reasons. While I was acutely aware of the implicit hierarchy that came with my *mzungu* status, the fact that I was a younger student doing research on my own in a relatively rural setting in Uganda was also puzzling to most. Most *mzungus* they encountered were usually Caucasian and came from Sweden, Canada or the USA, representing an affluent organization that was involved in development work or overseeing a funded project in the area. Therefore, the assumption was always that *mzungus* were rich and came with money from their organizations overseas. I, on the other hand, was on my own, not representing an organization, and stayed with a local family in the village (instead of at a hotel or guest house) and like everyone else in the village, took a *boda* (motorcycle taxi) to work every day instead of hiring a car and driver. Once I told people I was a student doing research on my own, they treated me differently; rather than asking me for money or typically treating me like a *mzungu* guest, they instead included me in everything they did, shared their food with me and were almost protective in the way they ensured that I got to where I needed to go and had someone accompany me at most times. On several occasions, I was invited to accompany mobile and community outreach teams on their visits to different villages and communities to provide health services for the day (Figures 3.7-3.8). The local organizations I worked with went out of their way to organize transport for me to far flung rural villages, or offer me a ride when their own research or outreach teams were heading out. They also ensured I always had a translator/facilitator with me if I was going to areas where English was not widely spoken. Being a student doing research on my own therefore worked

in my favour. People were less suspicious of my intentions because I was not affiliated to an organization. They were also more honest and open in sharing their stories, views and experiences because they considered it to help me learn about and understand their culture and the Ugandan way of life. Additional pictures from my fieldwork in Uganda can be found in Appendix M (verbal consent was obtained before any pictures were taken of participants or community members).

Figure 3.7. A family planning mobile outreach team preparing a client for a tubal ligation (female sterilization) procedure.

Figure 3.8. A service provider prepares to insert an implant into a client's arm.

With regard to the sensitivity of some of the topics discussed, such as sexual relationships, contraceptive methods and fertility preferences, both women and men were quite comfortable and open in disclosing details of their personal lives. My presence as a female *mzungu* did not hinder the interaction as most of the interviews and FGDs were conducted in the local Lusoga dialect, and participants were aware that I could not understand their conversations. Even when I did conduct a few interviews with participants who were fluent English speakers, they did not hesitate to talk openly about these topics, and if they felt uncomfortable, they were upfront about it or politely refused to answer.

Much of my understanding of Ugandan ways of thinking and living and of the culture came from anecdotal conversations I had with a range of people during my stay in the village. Sarah Namutamba, my Ugandan counterpart and fieldwork facilitator in the project, had a wealth of knowledge and experience as a fellow researcher working on maternal health and reproductive

health projects in the district. Many of the conversations we had while we sat around waiting for participants or walked across fields looking for people to interview were as enlightening as the interviews themselves. Similarly, talking to other staff in the local partner organizations, community health workers I met while visiting clinics, or just people in the community I lived in were deeply insightful in terms of understanding the ways women and men thought about their roles in their family and community, and the ways in which these manifested in daily life.

3.9 SUMMARY

To summarize, this chapter outlined the methodology, theoretical assumptions and methods used to address the research questions and aims of this thesis. With foundations in the pragmatist and feminist paradigms, the study employs a mixed methods, explanatory sequential approach to understand and quantify unmet need for contraception in Uganda. The first phase of the study seeks to do this through an analysis of quantitative data obtained from the Uganda DHS surveys for the years 1995-2016. To further understand the drivers behind high unmet need in the Busoga region of east Uganda, the second qualitative phase of the study employs a thematic analysis of data obtained through FGDs with women and individual, in-depth interviews with men.

The forthcoming chapters will outline the results of the quantitative and qualitative phases of this study, using the methods outlined in this section, with due consideration of trustworthiness, reflexivity and rigour. The discussion chapter will then employ a mixed methods approach for data triangulation and integration, in attempting to answer the main research questions and interpret the findings of this project in the context of the study setting.

4 QUANTITATIVE STUDY 1: CHANGES IN CONTRACEPTIVE USE OVER TIME IN UGANDA

4.1 INTRODUCTION

Previous studies focused on unmet need among women in Uganda have been largely qualitative in nature, looking at different enablers and barriers to contraceptive use at the individual, household, societal and health system levels. As described in the literature review in Chapter Two, these include myths and fears about contraception, poor management of side effects, partner opposition or a lack of male involvement in family planning, socio-cultural and gender norms, and issues around service provision (Kabagenyi, Jennings, et al., 2014; Nalwadda et al., 2010; Ouma et al., 2015). Among women, higher age, education and parity as well as better socioeconomic status and urban residence have shown associations with higher rates of contraceptive use (Andi et al., 2014; Asiimwe et al., 2014; Ketende et al., 2003).

For men, negative attitudes and stigma around contraception, fear of their partners experiencing side effects, and dissatisfaction with male contraceptive methods have been barriers to their involvement in reproductive health (Dougherty et al., 2018; Kaida et al., 2005; Thummalachetty et al., 2017). Yet few quantitative studies have considered men and their contraceptive behaviour in Uganda, and fewer still (none in Uganda) have looked at the links between men's demographic characteristics and their use of contraception, despite the acknowledged need for such information. A study on men in Kenya found region of residence, marital status, religion, wealth, fertility preferences, interaction with a health care provider, access to mass media, and the number of sexual partners to be significantly associated with modern contraceptive use (Ochako, Temmerman, Mbondo, & Askew, 2017). In the context of reproductive health and contraception, men need to be considered as they are not only women's partners, but individuals with distinct reproductive histories and desires of their own. As previously discussed, men are often key decision-makers in Ugandan society but not directly

involved in contraceptive discussions or programs (Vouking et al., 2014). Men's attitudes, intentions and behaviours around contraceptive use can thus directly impact fertility outcomes and maternal morbidity and mortality.

Tracking the temporal patterns of contraceptive use for both women and men is critical to understanding the success of past and current initiatives aimed at improving contraceptive use and is impossible to achieve through qualitative studies alone. Additionally, patterns of contraceptive use may vary within particular subpopulations, depending on demographic factors such as age, education status and place of residence (urban versus rural districts, region in the country, etc.). Only one study has previously looked at trends in modern contraceptive use by women in Uganda between the years 1995 to 2011, and reported higher odds of contraceptive use among women with higher education, urban residence, higher parity and better wealth status, and lower odds of contraceptive use among married or cohabiting women (Andi et al., 2014). No such studies have been undertaken with men in Uganda or in the SSA or east African regions to date, yet such work has value in providing key insights and empirical evidence for future health promotion policies and decisions.

The quantitative study presented in this chapter sought to address the above gap in the literature, by describing changes in contraceptive use over time among women and men in Uganda. Findings from this study have also been published in PLoS One in July 2019 (Namasivayam, Lovell, Namutamba, & Schluter, 2019)(Appendix J).

4.2 STUDY RATIONALE AND DESIGN

Using five representative Uganda DHS datasets, the primary aim of this study was to analyse patterns in any and modern contraceptive use among women aged 15-49 years and men aged 15-54 years for the 21 years between 1995 and 2016. The secondary aim was to investigate these patterns over a set of purposefully selected key demographic factors, namely: age, education, place of residence, and region. These factors were selected based on evidence of association with contraceptive use in previous studies mentioned in the introduction to this chapter (Andi et al., 2014; Asiimwe et al., 2014; Ketende et al., 2003), and therefore being important in charting contraceptive changes over time.

In line with DHS survey methodology, eligible participants included all women of reproductive age (15-49 years) who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey. In one-third of the sampled households, all men aged 15-54 years, including both usual residents and visitors who stayed in the household the night before the interview, were also eligible for individual interviews. Data for women and men were collected across all surveys using the standardized DHS women's and men's questionnaires, respectively.

The two principle outcome variables in this study were 'Any contraceptive use' and 'Modern contraceptive use'. In recognising that a proportion of women and men in Uganda may still rely on traditional/folkloric methods of contraception, any contraceptive use was included as an outcome variable in order to assess the changes in all forms of contraceptive use, as well as for modern methods specifically. The variable 'Any contraceptive use' was created based on responses to the DHS variable 'contraceptive use and intention'; responses were dichotomized into Yes (uses a modern, traditional or folkloric method), and No (not using a method but intends to use later, does not intend to use, never had sex). For 'modern contraceptive use', responses for the same variable were dichotomized into Yes (uses a modern method), and No

(uses a traditional method, uses a folkloric method, not using a method but intends to use later, does not intend to use, never had sex). Both outcome variables were elicited and presented separately for women and men.

Within the DHS classification, modern methods referred to any of the following: female sterilization, male sterilization, oral contraceptive pills, the IUD, injectables, implants, male and/or female condoms, diaphragms, contraceptive foam and contraceptive jelly, LAM, and other modern contraceptive methods (including cervical cap, contraceptive sponge, and others). Traditional methods referred to periodic abstinence (rhythm/ calendar method), and withdrawal. Folkloric methods referred to locally described methods and spiritual methods of unproven effectiveness, such as amulets, herbs, etc. Any contraceptive use referred to any specific method (modern, traditional or folkloric). Women's and men's responses to any or modern contraceptive use included methods used by their partner, as well as methods requiring couple negotiation (such as condom use or abstinence).

With regard to the selected demographic factors, age was grouped as 15-19, 20-24, 25-34, 35-39, and ≥40 years; highest educational attainment (attendance) was classified into no education, primary, secondary or higher; place of residence was dichotomized into urban and rural; while region of residence was defined by North, West, East, and Central geographic locations.

4.3 STATISTICAL METHODS

For the descriptive statistics in this study, unweighted frequencies are reported together with associated weighted percentages. Weighting accounted for the stratified two-stage cluster design to provide population estimates. A time variable was calculated for the years from 1995 (the baseline year). For the primary objective, first (time) and second ($time^2$) order weighted quadratic regressions were employed to model the rate of change in contraceptive use over the study period. The statistical superiority of the quadratic regression model over its linear

counterpart was assessed via the log-likelihood test, using unweighted data. For the secondary objective, weighted logistic regression models were employed for each key demographic variable.

For each variable, the main effect and time interaction terms were introduced together within the model, along with the time and time^2 variables. If the independent variable of interest is labelled "X" and the contraceptive use outcome of interest is labelled "Y", this implies that the logistic regression takes the form:

$$logit(Y) = intercept + \beta_1 \times time + \beta_2 \times time^2 + \beta_3 \times X + \beta_4 \times X \times time$$

so that β_3 gives the estimate of the main effect and β_4 gives the time interaction term. Measures of association were presented as odds ratios (ORs) and 95% confidence intervals (CIs), and significance was defined by α=0.05.

4.4 RESULTS

4.4.1 Participants

Individual data were elicited from 7,070 women in 1995, 7,246 in 2000/2001, 8,531 in 2006, 8,674 in 2011, and 18,506 women in 2016, totalling 50,027 women overall. Similarly, individual data were collected from 1,996 men in 1995, 1,962 in 2000/2001, 2,503 in 2006, 2,295 in 2011, and 5,336 men in 2016, totalling 14,092 men altogether. Response rates varied across the years from 93.8% (2011) to 97.0% (2016) for women, and from 85.1% (2000/2001) to 90.7% (2006) for men. For all participants across all years, the response rates were higher in rural areas. The main reason cited by the Uganda DHS survey reports for non-response was the failure to find the eligible participants in their homes, despite repeated visits to the household.

4.4.2 Demographic characteristics

The characteristics of women and men between 1995 and 2016 for the selected key demographic variables appears in Tables 4.1-4.4. Among women across all years of the study (Tables 4.1-4.2), the largest proportion of respondents were aged 15-19 years, had attained primary education, and resided in rural areas. Among men across all years of the study (Tables 4.3-4.4), ages were more evenly spread over the different groups compared to the corresponding distribution for women. Similar to women, the majority of men had attained at least primary education; although compared to women, a larger proportion of men attained a secondary education or higher.

Table 4.1. Any contraceptive use and demographic characteristics of women in Uganda across the study period (1995-2016)

	1995			2000/1			2006			2011			2016		
	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)
Age (years)															
15-19	1,624	134	(7.2)	1,687	194	(10.4)	1,948	124	(6.5)	2,026	134	(6.8)	4,276	405	(10.0)
20-24	1,567	243	(13.0)	1,542	397	(22.3)	1,662	347	(21.3)	1,666	376	(22.1)	3,782	1,155	(30.9)
25-29	1,323	249	(14.3)	1,326	363	(24.0)	1,410	330	(24.3)	1,618	488	(31.6)	3,014	1,178	(41.2)
30-34	987	224	(19.6)	955	272	(25.1)	1,228	331	(27.2)	1,101	352	(33.5)	2,600	1,015	(40.5)
35-39	743	159	(17.2)	783	213	(24.5)	959	217	(23.7)	992	321	(34.5)	2,029	780	(39.8)
≥40	826	133	(13.7)	953	206	(18.9)	1,324	276	(21.5)	1,271	313	(25.6)	2,805	885	(32.2)
Highest educational attainment															
None	1,808	136	(7.3)	1,459	179	(11.7)	1,768	173	(11.6)	1,332	160	(16.6)	2,071	426	(23.4)
Primary	3,901	575	(13.0)	4,098	810	(18.0)	4,922	868	(18.0)	4,820	1,042	(21.9)	10,893	3,127	(29.0)
Higher[†]	1,361	431	(29.0)	1,688	655	(36.8)	1,841	564	(31.1)	2,522	782	(30.6)	5,542	1,865	(34.5)
Place of residence															
Urban	2,439	627	(26.9)	2,416	838	(36.1)	1,450	478	(32.5)	2,562	810	(33.0)	4,379	1,445	(34.1)
Rural	4,631	515	(11.0)	4,830	807	(16.9)	7,081	1,127	(16.9)	6,112	1,174	(21.3)	14,127	3,973	(28.9)
Region															
Central	2,218	509	(21.1)	2,445	797	(31.2)	2,429	722	(29.3)	2,636	788	(29.9)	4,325	1,488	(35.1)
East	1,911	262	(11.2)	1,767	322	(14.4)	1,825	324	(17.8)	1,818	432	(23.1)	5,039	1,489	(29.7)
North	1,136	155	(11.8)	1,041	205	(16.8)	2,390	207	(9.7)	2,392	317	(14.1)	4,368	921	(21.8)
West	1,805	216	(8.8)	1,993	321	(14.0)	1,887	352	(18.8)	1,828	447	(23.1)	4,774	1,520	(31.6)

Note: [†]Indicates secondary or higher educational attainment.

Table 4.2. Modern contraceptive use and demographic characteristics of women in Uganda across the study period (1995-2016)

	1995			2000/1			2006			2011			2016		
	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)
Age (years)															
15-19	1,624	72	(3.4)	1,687	171	(9.0)	1,948	97	(5.2)	2,026	126	(6.1)	4,276	375	(9.4)
20-24	1,567	141	(6.3)	1,542	337	(18.7)	1,662	281	(17.2)	1,666	331	(19.8)	3,782	1,058	(28.3)
25-29	1,323	180	(9.0)	1,326	316	(20.2)	1,410	271	(19.7)	1,618	428	(27.6)	3,014	1,083	(37.4)
30-34	987	148	(11.5)	955	218	(19.5)	1,228	252	(22.0)	1,101	314	(30.0)	2,600	924	(36.7)
35-39	743	104	(10.4)	783	184	(20.8)	959	172	(18.7)	992	279	(30.3)	2,029	708	(36.0)
≥40	826	81	(7.4)	953	159	(13.8)	1,324	195	(15.4)	1,271	252	(21.0)	2,805	766	(27.4)
Highest educational attainment															
None	1,808	53	(2.4)	1,459	135	(8.6)	1,768	117	(8.2)	1,332	141	(14.6)	2,071	378	(20.6)
Primary	3,901	358	(7.1)	4,098	668	(14.6)	4,922	688	(14.3)	4,820	926	(19.5)	10,893	2,871	(26.6)
Higher[†]	1,361	315	(20.2)	1,688	581	(32.1)	1,841	463	(25.2)	2,522	663	(26.1)	5,542	1,665	(30.5)
Place of residence															
Urban	2,439	493	(22.1)	2,416	754	(32.9)	1,450	414	(28.2)	2,562	695	(28.5)	4,379	1,297	(30.5)
Rural	4,631	233	(4.8)	4,830	631	(13.2)	7,081	854	(12.9)	6,112	1,035	(18.8)	14,127	3,167	(26.1)
Region															
Central	2,218	370	(14.6)	2,445	704	(27.3)	2,429	601	(24.3)	2,636	671	(25.8)	4,325	1,332	(31.2)
East	1,911	151	(5.3)	1,767	265	(11.2)	1,825	256	(14.3)	1,818	385	(20.6)	5,039	1,355	(27.1)
North	1,136	45	(2.2)	1,041	155	(12.7)	2,390	159	(7.5)	2,392	302	(13.7)	4,368	869	(20.5)
West	1,805	160	(5.8)	1,993	261	(10.6)	1,887	252	(13.5)	1,828	372	(19.4)	4,774	1,358	(28.1)

Note: [†]Indicates secondary or higher educational attainment.

Table 4.3. Any contraceptive use and demographic characteristics of men in Uganda across the study period (1995-2016)

	1995			2000/1			2006			2011			2016		
	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)
Age (years)															
15-19	375	31	(7.8)	437	60	(13.2)	582	67	(10.7)	562	82	(13.0)	1,270	272	(22.9)
20-24	379	95	(24.6)	337	113	(30.8)	397	116	(29.6)	340	128	(38.1)	944	451	(49.1)
25-29	381	91	(19.7)	310	98	(31.4)	351	96	(27.7)	365	128	(36.0)	740	366	(47.7)
30-34	256	79	(28.8)	274	89	(25.8)	358	106	(28.5)	310	95	(30.5)	737	332	(44.7)
35-39	249	83	(27.0)	223	59	(24.8)	318	81	(24.2)	284	93	(32.9)	497	212	(42.6)
≥40	356	83	(18.9)	356	92	(23.0)	497	136	(29.7)	434	141	(33.3)	1,148	469	(42.2)
Highest educational attainment															
None	199	15	(7.8)	117	13	(12.0)	150	20	(16.8)	126	17	(18.1)	231	40	(19.2)
Primary	1,174	221	(17.6)	1,187	245	(19.2)	1,604	323	(19.6)	1,310	324	(25.4)	3,047	1,002	(33.2)
Higher[†]	623	226	(32.7)	633	253	(37.5)	749	259	(35.1)	859	326	(36.8)	2,058	1,060	(51.1)
Place of residence															
Urban	657	229	(35.7)	590	249	(45.6)	391	157	(38.4)	631	260	(41.5)	1,150	555	(48.2)
Rural	1,339	233	(17.7)	1,347	262	(19.8)	2,112	445	(21.2)	1,664	407	(26.0)	4,186	1,547	(37.2)
Region															
Central	641	178	(22.7)	673	255	(36.7)	724	251	(34.0)	672	261	(37.0)	1,258	579	(37.0)
East	546	114	(20.1)	458	97	(17.2)	536	140	(25.6)	499	145	(28.3)	1,450	526	(28.3)
North	331	85	(23.8)	269	48	(14.5)	661	110	(17.0)	601	136	(25.8)	1,249	439	(25.8)
West	478	85	(14.8)	537	111	(19.2)	582	101	(17.2)	523	125	(22.8)	1,379	558	(22.8)

Note: [†]Indicates secondary or higher educational attainment.

Table 4.4. Modern contraceptive use and demographic characteristics of men in Uganda across the study period (1995-2016)

	1995			2000/1			2006			2011			2016		
	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)	N	n	(%$_w$)
Age (years)															
15-19	375	22	(5.0)	437	55	(12.2)	582	65	(10.4)	562	81	(12.8)	1,270	255	(21.6)
20-24	379	66	(15.0)	337	98	(26.6)	397	104	(26.5)	340	114	(33.7)	944	419	(45.4)
25-29	381	54	(9.7)	310	74	(23.9)	351	84	(24.8)	365	110	(32.2)	740	333	(43.2)
30-34	256	39	(10.8)	274	66	(17.7)	358	92	(25.7)	310	82	(25.6)	737	285	(37.1)
35-39	249	48	(13.6)	223	42	(17.5)	318	60	(19.0)	284	76	(27.5)	497	186	(38.0)
≥40	356	44	(9.8)	356	68	(16.1)	497	101	(22.1)	434	115	(27.1)	1,148	419	(37.6)
Highest educational attainment															
None	199	5	(2.3)	117	8	(6.9)	150	12	(11.0)	126	14	(14.9)	231	36	(18.2)
Primary	1,174	101	(6.8)	1,187	178	(13.6)	1,604	266	(16.6)	1,310	281	(22.0)	3,047	907	(30.0)
Higher[†]	623	167	(23.1)	633	217	(32.4)	749	228	(30.9)	859	283	(32.0)	2,058	954	(45.7)
Place of residence															
Urban	657	167	(27.8)	590	220	(41.9)	391	148	(36.2)	631	225	(36.2)	1,150	509	(44.0)
Rural	1,339	106	(7.6)	1,347	183	(14.0)	2,112	358	(17.5)	1,664	353	(22.5)	4,186	1,388	(33.2)
Region															
Central	641	140	(18.0)	673	225	(32.8)	724	230	(31.4)	672	231	(33.2)	1,258	538	(41.5)
East	546	66	(9.7)	458	81	(14.4)	536	105	(19.5)	499	119	(22.9)	1,450	468	(31.7)
North	331	15	(3.7)	269	27	(6.7)	661	83	(13.2)	601	122	(23.0)	1,249	409	(33.3)
West	478	52	(8.2)	537	70	(10.3)	582	88	(14.9)	523	106	(19.5)	1,379	482	(35.2)

Note: [†]Indicates secondary or higher educational attainment.

4.4.3 Contraceptive use over time

In 2016, 30.3% of women, and 39.9% of men of reproductive age in Uganda were using any contraceptive methods, an increase from 13.4% of women and 20.3% of men in 1995. Furthermore, 27.3% of women and 35.9% of men were using a modern method of contraception in 2016, an increase from 7.4% and 10.4%, respectively, in 1995. Figure 4.1 depicts contraceptive use among women and men in Uganda across the study period. Non-linear increases in any and modern contraceptive use patterns are apparent for both women and men.

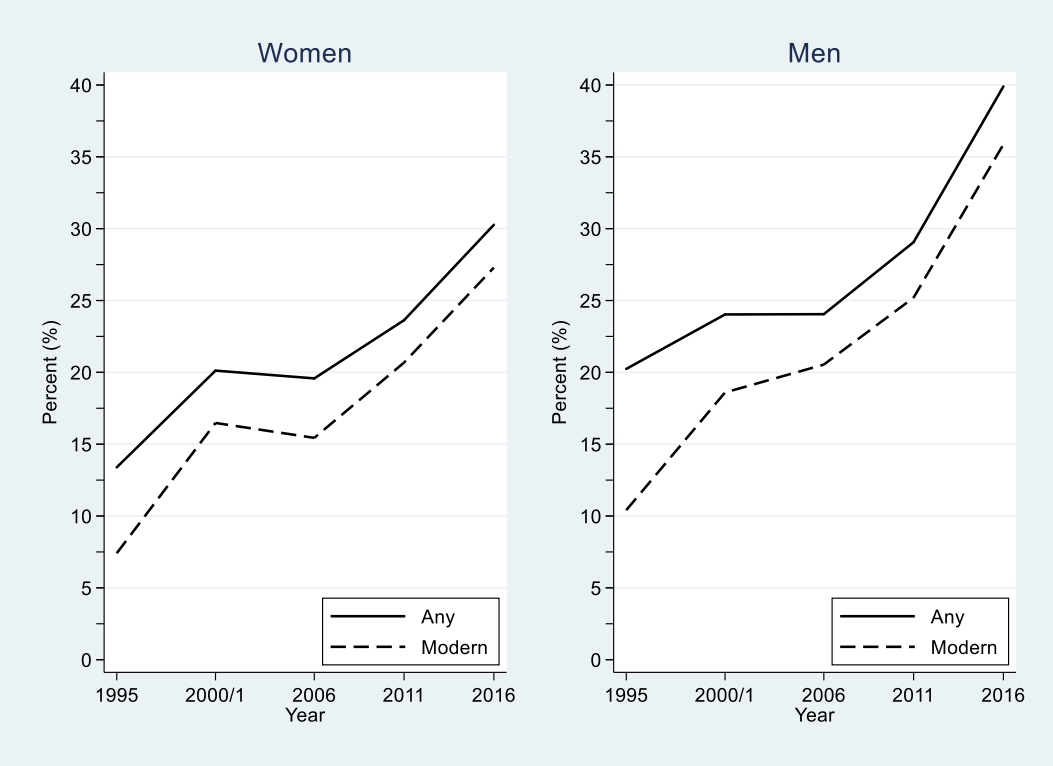

Figure 4.1. Estimates of any and modern contraceptive use among women and men in Uganda across the study period (1995-2016).

Weighted quadratic regression analyses confirmed these non-linear increases in any and modern contraceptive use over time. Table 4.5 gives the estimated coefficients and associated 95% CIs derived from these analyses, together with the level of significance for each term. For

any contraceptive use, the quadratic model was significantly better than its linear counterpart for both women (p<0.001) and men (p<0.001), demonstrating rapid, non-linear increases over the study period. For women, the predicted rate of any contraceptive use was given by 0.147 + 0.0035×(year–1995) + 1.7E-4×(year–1995)^2. For men, the predicted rate of any contraceptive use was given by 0.213 – - 0.0031×(year–1995) + 5.6E-4×(year–1995)^2. Similarly, for modern contraceptive use, the quadratic model was significantly better than its linear counterpart for both women (p<0.001) and men (p<0.001), also demonstrating rapid, non-linear increases over the study period. Here, the predicted rate for women was 0.090 + 0.0062×(year–1995) + 1.1E-4×(year–1995)^2, whereas for men the predicted rate was given by 0.116 + 0.0053×(year–1995) + 2.9E-4×(year–1995)^2.

Table 4.5. Estimates with associated 95% CIs for regression models of any and modern contraceptive use among women and men in Uganda over the years 1995-2016.

	Base year	Years since 1995			
Contraceptive	(1995)†	Linear term		Quadratic term	
use	est.	est.	(95% CI)	est.	(95% CI)
Women					
Any	0.147	0.0035	(0.0007, 0.0062)*	1.7E-4	(5.9E-5, 3.0E-4)**
Modern	0.090	0.0062	(0.0038, 0.0086)***	1.1E-4	(2.6E-7, 2.2E-4)*
Men					
Any	0.213	-0.0031	(-0.0076, 0.0014)	5.6E-4	(3.6E-4, 7.6E-4)***
Modern	0.116	0.0053	(0.0014, 0.0092)**	2.9E-4	(1.0E-4, 4.7E-4)**

Note: †first year of the study period; E denotes times 10 to the power of (e.g.: 1.7E-4 is 1.7×10-4 which is 0.00017); level of significance denoted by *p<0.05; **p<0.01; ***p<0.001.

4.4.4 Women's contraceptive use over time by key demographic variables

Among women using either any method, or a modern method of contraception, the largest proportion of users were between the ages of 30-34 and 35-39 years (for the years 1995-2000/2001, and 2011), and 25-29 and 30-34 years (for the years 2006 and 2016) (Tables 4.1 and 4.2); women with a secondary education or higher; those living in an urban area; and those in the Central region of the country. Conversely, across all the study years, women aged 15-19

years had the lowest proportion of contraceptive use, as did women with no education and those living in a rural area.

Each of the key demographic variables were separately related to any and modern contraceptive use by women in logistic regression models. All variables, and their interactions over time, were significantly associated with contraceptive use after adjusting for the time and time^2 changes (all $p<0.001$) (Table 4.6). This implies that the significant difference in the likelihood of contraceptive use within each demographic variable observed at baseline (1995) also significantly changed over time (Figures 4.2 and 4.3). Considering any contraceptive use by educational attainment groupings, women with a secondary or higher educational attainment had odds 5.84 greater of using any contraception than those without any education at baseline (1995); see Table 4.6. However, this gap narrows over time – seen by the interaction term <1.0 (in Table 4.6) and the lines converging in Figure 4.2. By 2016, the estimated odds of any contraceptive use for women with secondary or higher educational attainment was exp(ln(5.84) + ln(0.94)×(2016-1995)) = 1.59 greater than that of women without any education, after accounting for the general non-linear increase in any contraceptive use over time.

Similarly, women with a secondary or higher educational attainment had odds 8.66 greater of using modern contraception than those without any education at baseline (1995). This gap narrowed over time as well, again seen by the interaction term <1.0 and the lines converging in Figure 4.3. In 2016, the estimated odds of modern contraceptive use for women with secondary or higher educational attainment was exp(ln(8.66) + ln(0.92)×(2016-1995)) = 1.13 greater than that of women without any education, after accounting for the general non-linear increase in modern contraceptive use over time. These findings imply that over the 21-year period, women without any education have had a relatively higher contraceptive uptake than more educated women (although, in terms of absolute rates, their actual usage still lagged behind).

Table 4.6. OR together with associated 95% CIs of using any and modern contraceptive method for women and men in Uganda (1995-2016)

	Women				Men			
	Main effect		Time interaction		Main effect		Time interaction	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Any contraception								
Age (years)		*p*<0.001		*p*<0.001		*p*<0.001		*p*=0.42
15-19	1	(reference)			1	(reference)		
20-24	2.16	(1.75, 2.66)	1.03	(1.02, 1.05)	3.51	(2.60, 4.72)	0.99	(0.98, 1.02)
25-29	2.27	(1.84, 2.81)	1.05	(1.04, 1.07)	2.99	(2.15, 4.16)	1.00	(0.98, 1.02)
30-34	2.98	(2.43, 3.65)	1.04	(1.02, 1.05)	3.66	(2.47, 5.41)	0.99	(0.96, 1.01)
35-39	2.60	(2.07, 3.26)	1.04	(1.03, 1.06)	3.34	(2.39, 4.68)	0.99	(0.96, 1.01)
≥40	2.04	(1.65, 2.51)	1.04	(1.03, 1.05)	2.73	(1.96, 3.81)	1.00	(0.98, 1.02)
Highest educational attainment		*p*<0.001		*p*<0.001		*p*<0.001		*p*=0.41
None	1	(reference)			1	(reference)		
*p*rimary	1.90	(1.59, 2.27)	0.98	(0.97, 1.00)	1.97	(1.29, 3.00)	1.00	(0.97, 1.02)
Secondary or higher	5.84	(4.77, 7.14)	0.94	(0.93, 0.96)	4.63	(3.02, 7.11)	0.99	(0.96, 1.02)
Place of residence		*p*<0.001		*p*<0.001		*p*<0.001		*p*<0.001
Urban	1	(reference)			1	(reference)		
Rural	0.29	(0.25, 0.34)	1.05	(1.04, 1.06)	0.31	(0.25, 0.38)	1.03	(1.02, 1.05)
Region		*p*<0.001		*p*<0.001		*p*<0.001		*p*=0.004
Central	1	(reference)			1	(reference)		
East	0.38	(0.30, 0.47)	1.04	(1.02, 1.05)	0.58	(0.43, 0.77)	1.01	(0.99, 1.02)
North	0.37	(0.29, 0.47)	1.01	(1.00, 1.03)	0.55	(0.40, 0.76)	1.01	(0.99, 1.03)
West	0.32	(0.25, 0.41)	1.05	(1.03, 1.06)	0.37	(0.27, 0.50)	1.03	(1.01, 1.05)
Modern contraception								
Age (years)		*p*<0.001		*p*<0.001		*p*<0.001		*p*=0.76
15-19	1	(reference)			1	(reference)		
20-24	2.16	(0.75, 2.66)	1.03	(1.02, 1.04)	2.97	(2.11, 4.17)	1.00	(0.98, 1.02)
25-29	2.51	(2.00, 3.13)	1.04	(1.03, 1.06)	2.21	(1.54, 3.18)	1.01	(0.99, 1.04)
30-34	2.94	(2.35, 3.68)	1.03	(1.02, 1.05)	2.17	(1.48, 3.17)	1.00	(0.98, 1.02)
35-39	2.77	(2.15, 3.57)	1.04	(1.02, 1.05)	2.09	(1.43, 3.06)	1.00	(0.98, 1.03)
≥40	1.86	(1.44, 2.40)	1.04	(1.02, 1.05)	1.80	(1.25, 2.58)	1.01	(0.99, 1.03)
Highest educational attainment		*p*<0.001		*p*<0.001		*p*<0.001		*p*<0.001
None	1	(reference)			1	(reference)		

Primary	2.50	(2.03, 3.10)	0.97	(0.96, 0.98)	2.40	(1.36, 4.25)	0.99	(0.95, 1.02)
Secondary or higher	8.66	(6.87, 10.92)	0.92	(0.91, 0.94)	8.22	(4.62, 14.62)	0.96	(0.92, 0.99)
Place of residence		$p<0.001$		$p<0.001$		$p<0.001$		$p<0.001$
Urban	1	(reference)			1	(reference)		
Rural	0.20	(0.16, 0.24)	1.07	(1.06, 1.08)	0.19	(0.15, 0.25)	1.06	(1.04, 1.08)
Region		$p<0.001$		$p<0.001$		$p<0.001$		$p<0.001$
Central	1	(reference)			1	(reference)		
East	0.30	(0.23, 0.38)	1.05	(1.04, 1.07)	0.39	(0.28, 0.54)	1.03	(1.00, 1.05)
North	0.19	(0.14, 0.26)	1.05	(1.03, 1.07)	0.14	(0.09, 0.22)	1.08	(1.05, 1.11)
West	0.28	(0.21, 0.36)	1.06	(1.04, 1.07)	0.23	(0.16, 0.34)	1.05	(1.03, 1.08)

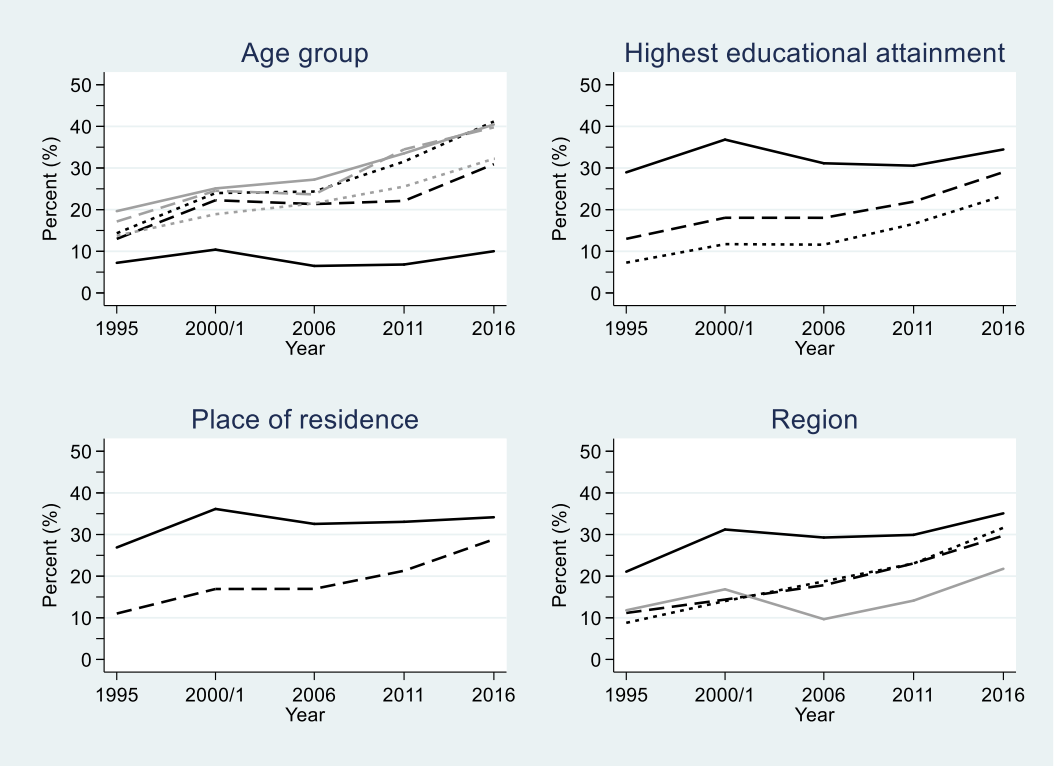

Figure 4.2. Estimates of any contraceptive use among women in Uganda across the study period (1995-2016), partitioned by the considered demographic variables.

Key: age group (years): 15-19 (black/solid); 20-24 (black/dash); 25-29 (black/dot); 30-34 (grey/solid); 35-39 (grey/dash); ≥40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

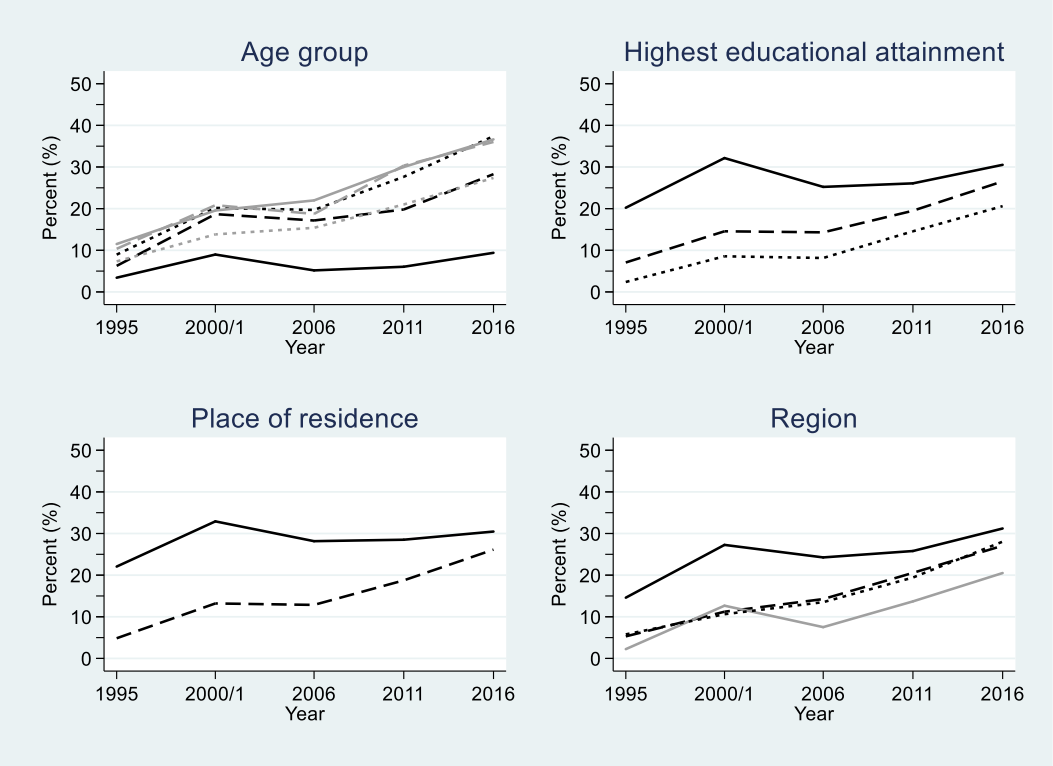

Figure 4.3. Estimates of modern contraceptive use among women in Uganda across the study period (1995-2016), partitioned by the considered demographic variables.
Key: age group (years): 15-19 (black/solid); 20-24 (black/dash); 25-29 (black/dot); 30-34 (grey/solid); 35-39 (grey/dash); ≥40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

4.4.5 Men's contraceptive use over time by key demographic variables

Among men using any method of contraception, the largest proportion of users in 1995 were between the ages of 30-34 and 35-39 years. This gradually changed over time to men aged 20-24 and 25-29 years being the largest user groups in 2011 and 2016 (Table 4.3). As with women, men with a secondary education or higher, living in an urban area, and within the Central region of the country comprised the largest proportion of users of any contraceptive method. For modern contraceptive use across the study period, men aged 20-24 years remained the largest

user group by age. Similar to the use of any contraceptive method, men with a secondary education or higher, living in an urban area and within the Central region of the country were the largest user groups of modern contraceptives (Table 4.4).

Table 4.6 also shows the logistic regression model results for men. Similar to women, the main effect terms were significant for all the considered variables for both any contraceptive use, and modern contraceptive use (all $p<0.001$). However, unlike women, there was no significant interaction over time for any contraceptive use among men grouped by age ($p=0.42$) or highest educational attainment ($p=0.41$) or for modern contraceptive use by age ($p=0.76$). This implies that the significant differences observed at baseline were largely preserved over time for these variables (Figures 4.4 and 4.5). Considering any contraceptive use by educational attainment groupings, men with secondary or higher educational attainment had odds 4.63 greater of using any contraception than those without any education at baseline (1995) (Table 4.6). By 2016, the estimated odds of any contraceptive use for men with secondary or higher educational attainment was $\exp(\ln(4.63) + \ln(0.99)\times(2016\text{-}1995)) = 3.75$ greater than that for men without any education, after accounting for the general non-linear increase in any contraceptive use over time.

Similarly, men with secondary or higher educational attainment had odds 8.22 greater of using modern contraception than those without any education at baseline (1995) (Table 4.6). In 2016, the estimated odds of modern contraceptive use for men with secondary or higher educational attainment was $\exp(\ln(8.22) + \ln(0.96)\times(2016\text{-}1995)) = 3.40$ greater than that of men without any education, after accounting for the general non-linear increase in modern contraceptive use over time. Although less, the estimated ORs for any and modern contraceptive use grouped by education were non-significantly smaller – and there was little convergence seen between the associated lines in Figures 4.4 and 4.5.

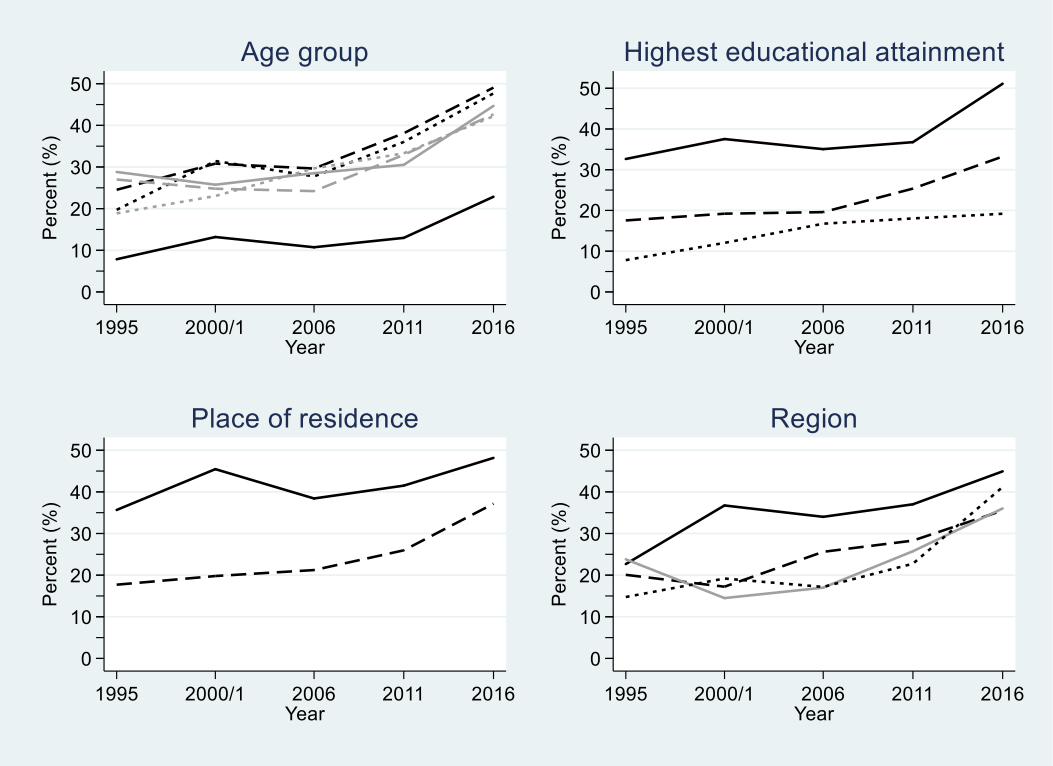

Figure 4.4. Estimates of any contraceptive use among men in Uganda across the study period (1995-2016), partitioned by the considered demographic variables.

Key: age group (years): 15-19 (black/solid); 20-24 (black/dash); 25-29 (black/dot); 30-34 (grey/solid); 35-39 (grey/dash); ≥40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

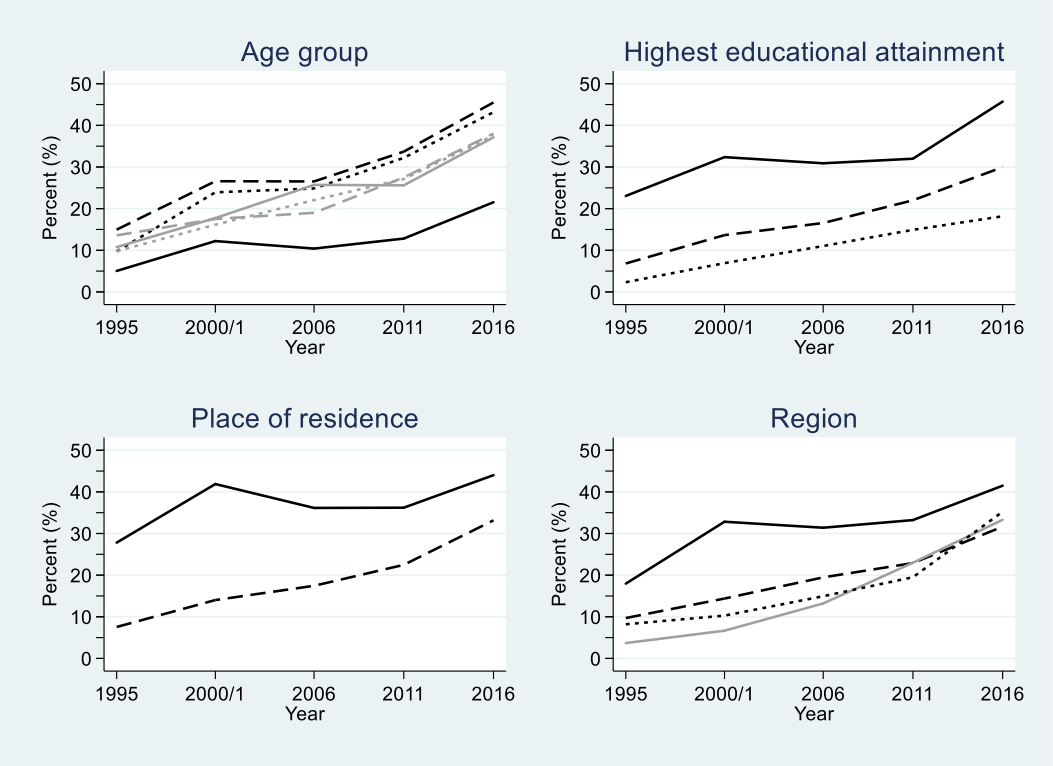

Figure 4.5. Estimates of modern contraceptive use among men in Uganda across the study period (1995-2016), partitioned by the considered demographic variables.
Key: age group (years): 15-19 (black/solid); 20-24 (black/dash); 25-29 (black/dot); 30-34 (grey/solid); 35-39 (grey/dash); ≥40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

4.5 DISCUSSION AND SUMMARY

In this first epidemiological study of its kind, it was demonstrated that both any and modern contraceptive use among women and men has significantly increased over time in Uganda. Particularly noteworthy is that the rate of change of contraceptive use accelerated in later years compared to earlier years. There are likely to be several reasons for this non-linear increase in later years. In addition to the numerous investments and ongoing programmatic efforts in reproductive health, the end of the war between the Ugandan government and the Lords' Resistance Army (in 2006) and the resumption and restoration of the country's healthcare

system and services thereafter are significant factors of possible influence in the sharper increase in contraceptive prevalence after 2006 (Dolan, 2007).

The changes in contraceptive use associated with the different demographic variables for women and men across the study period point to important differential shifts in behaviour within the population at large. The changes observed among populations grouped by educational level and place of residence are particularly notable. The relatively steeper increase in contraceptive uptake seen among women and men with no education, and among those with only a primary education, compared to those with a higher level education may reflect the success of family planning programs in effectively reaching lower educated populations (Andi et al., 2014). Such patterns could also be the result of shifting norms due to generally higher levels of awareness around family planning benefits via a critical mass of more educated people. However, it must also be noted that these population's baseline contraceptive usage rates were substantially less than their more educated counterparts and remained so by the study's end date, indicating that this is still a population subgroup that warrants attention and targeted effort.

Similarly, steeper increased in contraceptive use over time were seen among rural populations compared to urban populations. In terms of place of residence, given that the majority of Uganda's population is rural and in some places, hard to reach (Uganda Bureau of Statistics, 2016), accessibility to reproductive health services is often a challenge (Asiimwe et al., 2014). Community health workers and VHTs are the critical first touchpoint in these settings, providing services such as family planning counselling and in some instances, short-term family planning methods (Stanback et al., 2010). These increases in contraceptive use may reflect the success of family planning initiatives and outreach programs effectively reaching these rural and remote communities.

The temporary decrease in contraceptive use seen in the data for both women and men in 2006 is likely to be a result of the end of the long-standing war in Uganda in the same year, and the subsequent suspension and withdrawal of humanitarian aid from the country(Casey et al., 2013). A secondary contributing factor to this observed decrease could have been the shift in focus of HIV prevention campaigns, from the Abstinence-Be Faithful-Condom use (ABC) approach, to predominantly abstinence (Green, Halperin, Nantulya, & Hogle, 2006). Furthermore, many HIV/AIDS campaign efforts and prevention programs withdrew from Uganda in the early and mid-2000s, due to the country's rapid and remarkable HIV prevalence decline in the 1990s (Slutkin et al., 2006). The intensity of the promotion and distribution of condoms, which was a large component of these campaigns, therefore likely decreased or slowed temporarily during this time, before the country's public healthcare system resumed these efforts as a continuing aspect of reproductive health programs.

A particular strength of this study was the use of data obtained through DHS variables that were routinely measured throughout the 21-year study period, consistently using the same standardized DHS questionnaires and sampling techniques. This ensured consistency and internal validity of the study results. A weakness pertaining to this study is the shifting coverage of the geographical regions across the study period. For instance in the 1995 dataset, the Kitgum district was not included; in 2000/2001, the districts of Kasese and Bundibugyo in the Western Region and Gulu and Kitgum in the Northern Region were excluded (due to access issues around security at the time); and in 2006, parts of the northern region were oversampled in order to provide estimates for two areas of interest: Karamoja and internally displaced persons camps. In 2016, three additional land areas in greater Kampala, as well as islands and mountain regions were included. However, given that the combined population of these districts corresponded to <5% of the total Ugandan population at each of the respective time points, the sampling bias associated with the inclusion/exclusion of these districts is likely to

be negligible. While the DHS response rates were relatively good for both women and men, ranging from 85.1% to 97.0% across the survey years, those who did not participate are likely to have lower contraceptive use and poorer health-seeking behaviours than those who did participate. This may have over-inflated the usage estimates reported in the results. Sample sizes of women and men across the five DHS data sets were also not consistent, and increased in each subsequent DHS survey across the study years.

It is worth acknowledging that findings in this study show a significant increase and dynamism across key demographic variables in contraceptive use and uptake by both women and men over time. These are likely an indication of the success of family planning programs and interventions in Uganda that have resulted in important population behaviour changes. This evidence could serve to inform future evidence-based strategies and directions of future reproductive health programs and policies, aligning with the Uganda FP-CIP. Also important to acknowledge is the collateral effect of HIV/AIDs campaigns in increasing awareness and behaviour change around safe sex practices and contraceptive use (Green et al., 2006), as well as increasing levels of education and resulting shifts in reproductive health choices among the population at large. Health system improvements as well as the effective implementation of health policy around reproductive health and contraceptive access may also be important contributors (Mwaikambo et al., 2011). The continued evaluation and reassessment of changes in contraceptive behaviour and uptake by way of large-scale national surveys is hence essential to ensuring the availability of up-to-date evidence for driving future family planning program and policy directions. A further discussion of the findings in this study, particularly around women's and men's increases in contraceptive use, will be presented in the Discussion chapter, integrating salient findings from the other studies in this project as well.

In addition to the significant increases in contraceptive rates seen in this study, the associations of the purposefully selected variables also changed over time. This motivates the consideration

of more updated data (e.g. from 2016) using a broader suite of variables to identify current patterns and subpopulations of interest for future health promotion and targeted programming. Furthermore, given the rapid and dynamic changes within the Ugandan population and different sub-populations over time, historical relationships and patterns of association are likely to become obsolete. Therefore to provide a complete contemporary quantitative picture of the factors affecting contraceptive use, as well as their associated effect sizes and impact, updated epidemiological modelling is necessary – as past models are no longer likely to provide a valid representation. The next chapter presents the results of the second quantitative study, which focused on one such approach towards a predictive model.

5 QUANTITATIVE STUDY 2: CURRENT PREDICTORS OF CONTRACEPTIVE USE IN UGANDA

5.1 INTRODUCTION

The previous chapter highlighted the significant changes in contraceptive use over time in Uganda, among both women and men (Namasivayam et al., 2019). Though previous studies have considered different demographic, socioeconomic and community-level factors and their association with contraceptive use for women and men in Uganda (DeRose & Ezeh, 2010; Kabagenyi, Jennings, et al., 2014; McGuire & Stephenson, 2015; Ouma et al., 2015; Thummalachetty et al., 2017), almost no research exists on current, country-wide contraceptive use among women and men. Based on the most recent 2016 DHS data for Uganda, this study sought to identify contemporary predictors of contraceptive use among women and men, and determine how these predictors influenced modern contraceptive use. This study's findings aim to provide evidence to inform and refine the design and implementation of family planning programs and messaging to more effectively meet the reproductive health needs of the Ugandan population. Findings from this study have also been published in BMJ Open in February 2020 (Namasivayam, Lovell, Namutamba, & Schluter, 2020) (Appendix J).

5.2 STUDY RATIONALE AND DESIGN

In line with DHS survey methodology and as in the first quantitative study, eligible interview participants included all women of reproductive age (15-49 years) in the selected households and all men aged 15-54 years in a third of the sampled households (detailed in section 3.5.1). Data for women and men were collected across all surveys using the standardized DHS women's and men's questionnaires, respectively.

The main outcome variable in this study was modern contraceptive use, derived from the existing DHS variable on current contraceptive use by method type, with responses dichotomized into No (not using a method, uses a traditional method, uses a folkloric method) and Yes (uses a modern method). The existing DHS variable excluded women who were pregnant and both women and men who had never had sex. The same classifications used in the first study for modern, traditional and folkloric contraceptive methods were employed this study (see section 3.5.1 for details). Women's and men's responses to modern contraceptive use included methods used by their partner, as well as methods requiring couple negotiation (condom use or abstinence).

The focus on modern rather than any contraceptive use in this study was motivated by the established evidence-base that modern contraceptive methods are more successful in reducing and preventing unwanted pregnancies compared with traditional and/or folkloric methods (Ajayi, Adeniyi, & Akpan, 2018). For significant headway to be made in addressing unmet need for contraception and reducing the burden of maternal morbidity and mortality, it is therefore essential to focus on modern contraception. Furthermore, the difference between any and modern contraceptive use is driven by only a small proportion of contraceptive users (four percent of married women in 2016) (Uganda Bureau of Statistics, 2018). As evident in the previous chapter, the number of traditional/folkloric contraceptive users in Uganda has also decreased over time.

Age, education level, place of residence, region of residence, marital status, religion, parity, wealth index, hearing about family planning through the media, and discussing family planning with a health worker, were considered as being potential predictors of modern contraceptive use for women and men, based on previous studies that have associated these factors with contraceptive use (Andi et al., 2014; Asiimwe et al., 2014; Ketende et al., 2003; Rutaremwa, Kabagenyi, et al., 2015). For women, three additional variables were also available: if distance

to the health facility was a problem; if getting money for treatment was a problem; and, if getting permission to seek treatment was a problem, and were included based on findings from the literature (Nalwadda et al., 2010; Ouma et al., 2015).

5.3 STATISTICAL METHODS

Analyses were conducted separately on women's and men's datasets, accounting for the stratified two-stage cluster design and sample weightings. Unweighted sample numbers are reported in the descriptive statistics, together with their associated weighted percentages. Initially, bivariable logistic regression models were employed for each potential predictor variable to assess their association with modern contraceptive use. All demographic variables were then considered together (Model 1). Next, proximal variables were collectively added to provide insight into their potential confounding or moderating effects (Model 2). Finally, parsimonious multivariable models were derived (Model 3). In the spirit of Sun and colleagues (1996), this was done by only considering variables yielding bivariable associations with $p \leq 0.30$ as potential candidates for Model 3. Forward and backward stepwise selection approaches for these candidate variables were then separately undertaken to determine the final model, using $\alpha=0.05$ to define significance and *p*-values derived from adjusted Wald's type III tests. Both approaches were employed in an effort to triangulate the results, or reveal discrepancies between models. Spearman's correlation coefficients were used to identify potential multicollinearity issues between the considered predictor variables.

The ability of the variables to predict modern contraceptive use in the final women and men's models was determined by a 10-fold cross-validated AUC of the receiver operating characteristic (ROC) curve. A ROC curve provides a standardised way of evaluating the ability of a continuous marker to predict a binary outcome, and plots the true positive rate (sensitivity)

against a function of the false positive rate (1-specificity) at various levels of the marker. The AUC is frequently employed as a summary measure of a model's predictive accuracy (Fan, Upadhye, & Worster, 2006). Adopting the recommendations of Hosmer and Lemeshow, an AUC of 0.5 suggests no discrimination, 0.5-0.7 is considered poor, 0.7-0.8 is considered acceptable, 0.8-0.9 is considered excellent, and more than 0.9 is considered outstanding (Hosmer & Lemeshow, 2000). In k-fold cross-validation, the dataset is randomly partitioned into k approximately equally sized sub-samples (or folds). At each iteration, one fold is retained as the validation data for testing the model and estimating the AUC, while the remaining k-1 folds are used as training data for model estimation. This process is repeated k times, with each of the k folds used once as the validation data. The "cvauroc" procedure in Stata was employed to derive and average these 10-fold AUCs, and estimate its associated 95% bias corrected CI (Luque-Fernandez, Redondo-Sánchez, & Maringe, 2019). K-fold cross-validation avoids the optimistic estimates of predictive performance known to exist when the full dataset is used for both model specification and prediction assessment.

5.4 RESULTS

5.4.1 Demographic characteristics

A representative sample of 20,880 households was randomly selected for the 2016 Uganda DHS, with 19,088 eligible women and 5,676 eligible men being identified. Interviews were completed with 18,506 (97.0%) women and 5,336 men (94.0%). Their demographic profiles appear in Table 5.1.

Table 5.1. Distribution of demographic characteristics of Ugandan women (N=18,506) and men (N=5,336) in 2016.

	Women		Men	
	N	($\%_w$)[1]	N	($\%_w$)[1]
Age (years)				
15-24	8,058	(43.7)	2,214	(41.9)
25-34	5,614	(30.2)	1,477	(27.7)
≥35	4,834	(26.1)	1,645	(30.4)
Highest educational level				
No education	2,071	(9.6)	231	(4.2)
Primary	10,893	(57.4)	3,047	(55.3)
Secondary or higher	5,542	(32.9)	2,058	(40.6)
Marital status				
Unmarried	4,738	(25.8)	2,029	(39.0)
Married	11,379	(60.7)	3,012	(55.4)
Divorced/separated/widowed	2,389	(13.5)	295	(5.6)
Number of children				
0	4,901	(26.7)	2,163	(41.6)
1-3	7,079	(38.9)	1,363	(25.9)
≥4	6,526	(35.5)	1,810	(32.6)
Place of residence				
Urban	4,379	(26.7)	1,150	(24.9)
Rural	14,127	(73.3)	4,186	(75.1)
Wealth Index				
Poor	7,524	(35.9)	2,104	(34.6)
Middle	3,485	(18.7)	1,049	(19.6)
Rich	7,497	(45.4)	2,183	(45.8)

Note: [1]weighted percentages account for the sampling weights and study design

5.4.2 Knowledge, sources and types of contraception

The majority of women and men were aware of a modern method of contraception (Table 5.2), with very few participants knowing only of a traditional method or of no method. Where sources of contraceptives were concerned, most women and men obtained their last contraceptive method from a government health facility, though a high proportion of women (32.5%) also obtained their method from a private clinic. Among male contraceptive users, the second most popular source was a pharmacy or drug shop, which might be expected as condoms are more freely available and do not require a prescription or health worker's approval for purchase. With regard to contraceptive method types, the injectable was the most common among women (13.9%), while male condoms were the most common among men (19.9%).

Table 5.2. Knowledge, sources and types of contraception among participating Ugandan women and men in 2016.

	Women		Men	
	n	(%)	n	(%)
Knowledge of any method				
No method	187	(1.0)	37	(0.7)
Modern method	18,306	(98.9)	5,295	(99.2)
Traditional method	12	(0.1)	3	(0.1)
Folkloric method	0	(0)	1	(<0.1)
*Last source of contraception**				
Government clinic/public source	2,888	(58.5)	381	(45.2)
Private clinic	1,603	(32.5)	154	(18.2)
Pharmacy/drug shop	311	(6.3)	179	(21.2)
Grocery store/friend/religious institution/other	133	(2.7)	129	(15.3)
Contraceptive method type				
Pill	282	(1.5)	132	(2.5)
IUD	208	(1.1)	64	(1.2)
Injections	2574	(13.9)	406	(7.6)
Male condom	578	(3.1)	1061	(19.9)
Female sterilization	341	(1.8)	46	(0.9)
Male sterilization	9	(0.1)	1	(<0.1)
Periodic abstinence	163	(0.9)	79	(1.5)
Withdrawal	343	(1.9)	136	(2.5)
Other traditional	45	(0.2)	1	(<0.1)
Implants	874	(4.7)	167	(3.1)
LAM	115	(0.6)	17	(0.3)
Female condom	1	(<0.1)	-	
Emergency contraception	14	(0.1)	6	(0.1)
Other modern method	1	(<0.1)	1	(<0.1)
Standard days method (SDM)	53	(0.3)	15	(0.3)

* 73.3% of cases were missing for this variable; %s have been adjusted to account for the valid number of cases.

5.4.3 Contraceptive use among women and men – overall and bivariable relationships

Overall, 4,914 (26.6%) women and 1,897 (35.6%) men used a modern contraceptive method. In both the women's and men's bivariable analyses (Tables 5.3 and 5.4), almost all predictor variables had notable OR effect sizes. For women, particularly large effect sizes were seen for age, marital status and parity. For men, large effect sizes were associated with education, wealth index, hearing about family planning through the media and discussing family planning with a healthcare worker.

Table 5.3. Distribution of Ugandan women's modern contraceptive use across considered potential predictor variables, together with ORs and 95% CIs for bivariable analyses, and adjusted odds ratios (AORs) and 95% CIs for Model 1, Model 2 and Model 3.

				Bivariable model			Model 1			Model 2			Model 3	
	N	n	(%$_w$)[1]	OR	(95% CI)	*p*	AOR	(95% CI)	*p*	AOR	(95% CI)	*p*	AOR	(95% CI) *p*
Age (years)						<0.001			<0.001			<0.001		<0.001
15-24	8,058	1,433	(18.3)	1	(reference)		1	(reference)		1	(reference)		1	(reference)
25-34	5,614	2,007	(37.1)	2.62	(2.39, 2.90)		1.08	(0.96, 1.22)		1.08	(0.95, 1.22)		1.09	(0.97, 1.23)
≥35	4,834	1,474	(31.0)	2.00	(1.81, 2.22)		0.78	(0.67, 0.90)		0.76	(0.66, 0.89)		0.78	(0.68, 0.91)
Highest educational attainment						<0.001			<0.001			<0.001		0.001
None	2,071	378	(20.6)	1	(reference)		1	(reference)		1	(reference)		1	(reference)
Primary	10,893	2,871	(26.6)	1.39	(1.19, 1.63)		1.71	(1.46, 2.00)		1.70	(1.45, 2.00)		1.71	(1.46, 2.01)
Higher	5,542	1,665	(30.5)	1.69	(1.44, 1.99)		2.28	(1.92, 2.73)		2.25	(1.87, 2.69)		2.30	(1.92, 2.73)
Place of residence						<0.001			0.12			0.19		
Urban	4,379	1,297	(30.5)	1	(reference)		1	(reference)		1	(reference)			
Rural	14,127	3,617	(26.1)	0.81	(0.72, 0.90)		0.90	(0.80, 1.02)		0.92	(0.82, 1.04)			
Region						<0.001			0.002			0.01		0.003
Central	4,325	1,332	(31.2)	1	(reference)		1	(reference)		1	(reference)		1	(reference)
East	5,039	1,355	(27.1)	0.82	(0.72, 0.93)		0.91	(0.79, 1.05)		0.92	(0.80, 1.06)		0.90	(0.78, 1.03)
North	4,368	869	(20.5)	0.57	(0.49, 0.66)		0.74	(0.63, 0.87)		0.77	(0.65, 0.90)		0.74	(0.64, 0.87)
West	4,774	1,358	(28.1)	0.86	(0.75, 0.99)		0.93	(0.81, 1.08)		0.94	(0.82, 1.08)		0.93	(0.81, 1.07)
Marital status						<0.001			<0.001			<0.001		<0.001
Unmarried	4,738	491	(10.7)	1	(reference)		1	(reference)		1	(reference)		1	(reference)
Married	11,379	3,841	(34.8)	4.46	(3.91, 5.09)		1.36	(1.16, 1.59)		1.37	(1.16, 1.61)		1.35	(1.15, 1.58)
S/D/W[2]	2,389	582	(25.5)	2.87	(2.47, 3.32)		0.87	(0.72, 1.04)		0.88	(0.73, 1.06)		0.87	(0.73, 1.04)
Religion						0.13			0.25			0.23		
Christian[3]	8,585	2,357	(27.9)	1	(reference)		1	(reference)		1	(reference)			
Catholic	7,552	1,916	(26.4)	0.93	(0.84, 1.02)		0.99	(0.90, 1.09)		0.99	(0.90, 1.08)			
Muslim	2,166	595	(28.3)	1.02	(0.87, 1.19)		0.91	(0.77, 1.08)		0.90	(0.76, 1.07)			
Other	203	46	(22.1)	0.73	(0.50, 1.08)		0.72	(0.51, 1.02)		0.73	(0.51, 1.03)			
No. of children						<0.001			<0.001			<0.001		<0.001
0	4,901	343	(7.2)	1	(reference)		1	(reference)		1	(reference)		1	(reference)
1-3	7,079	2,280	(33.4)	6.47	(5.57, 7.51)		6.01	(4.98, 7.24)		6.14	(5.09, 7.41)		6.01	(4.99, 7.23)
≥4	6,526	2,291	(36.0)	7.25	(6.20, 8.48)		9.06	(7.29, 11.25)		9.41	(7.57, 11.70)		9.06	(7.31, 11.22)
Wealth index						<0.001			<0.001			<0.001		<0.001

Poor	7,524	1,623	(22.7)	1	(reference)	1	(reference)	1	(reference)		1	(reference)
Middle	3,485	978	(28.2)	1.37	(1.21, 1.54)	1.32	(1.16, 1.50)	1.29	(1.14, 1.47)		1.30	(1.14, 1.48)
Rich	7,497	2,313	(30.9)	1.56	(1.41, 1.72)	1.46	(1.29, 1.65)	1.41	(1.24, 1.59)		1.46	(1.29, 1.65)
Heard about family planning through media					<0.001					0.05		
No	6,004	1,345	(23.3)	1	(reference)			1	(reference)			
Yes	12,502	3,569	(29.1)	1.36	(1.24, 1.49)			1.10	(1.00, 1.21)			
Discussed family planning with a health worker					<0.001					0.18		
No	7,591	2,062	(28.2)	1	(reference)			1	(reference)			
Yes	5,161	1,551	(30.9)	1.14	(1.03, 1.25)			0.94	(0.84, 1.05)			
Unknown	5,754	1,301	(23.0)	0.76	(0.69, 0.84)			1.05	(0.95, 1.16)			
If distance to healthcare facility is a problem					<0.001					0.03		0.006
No	11,292	3,122	(28.5)	1	(reference)			1	(reference)		1	(reference)
Yes	7,214	1,792	(25.3)	0.85	(0.78, 0.92)			0.89	(0.81, 0.99)		0.88	(0.80, 0.96)
If getting money needed for treatment is a problem					<0.001					0.41		
No	9,823	2,759	(28.9)	1	(reference)			1	(reference)			
Yes	8,683	2,155	(25.3)	0.83	(0.77, 0.90)			0.96	(0.88, 1.05)			
If getting permission to seek treatment is a problem					0.01					0.59		
No	17,486	4,674	(27.5)	1	(reference)			1	(reference)			
Yes	1,020	240	(23.5)	0.81	(0.69, 0.95)			1.05	(0.88, 1.26)			

Note:[1]Weighted percentages account for the sampling weights and study design [2]Separated/divorced/widowed [3]Christians excluding Catholics

Table 5.4. Distribution of Ugandan men's modern contraceptive use across considered potential predictor variables, together with ORs and 95% CIs for bivariable analyses, and adjusted odds ratios (AORs) and 95% CIs for Model 1, Model 2 and Model 3.

				Bivariable model			Model 1		Model 2			Model 3		
	N	n	($\%_w$)	OR	(95% CI)	*p*	AOR	(95% CI)	*p*	AOR	(95% CI)	*p*	AOR	(95% CI)	*p*
Age (years)						<0.001			0.42			0.45			
15-24	2,214	674	(31.7)	1	(reference)		1	(reference)		1	(reference)				
25-34	1,477	618	(40.2)	1.45	(1.23, 1.70)		1.17	(0.92, 1.49)		1.17	(0.92, 1.48)				
≥35	1,645	605	(37.7)	1.30	(1.10, 1.54)		1.13	(0.84, 1.52)		1.16	(0.87, 1.56)				
Highest educational attainment						<0.001			<0.001			<0.001			<0.001
None	231	36	(18.2)	1	(reference)		1	(reference)		1	(reference)		1	(reference)	
Primary	3,047	907	(30.0)	1.93	(1.27, 2.92)		1.99	(1.31, 3.03)		1.86	(1.22, 2.82)		1.87	(1.23, 2.85)	
Higher	2,058	954	(45.7)	3.79	(2.50, 5.76)		3.50	(2.28, 5.40)		3.02	(1.95, 4.66)		3.10	(2.01, 4.78)	
Place of residence						<0.001			0.39			0.34			
Urban	1,150	509	(44.0)	1	(reference)		1	(reference)		1	(reference)				
Rural	4,186	1,388	(33.2)	0.63	(0.54, 0.74)		0.92	(0.76, 1.11)		0.91	(0.75, 1.10)				
Region						<0.001			0.15			0.05			0.03
Central	1,258	538	(41.5)	1	(reference)		1	(reference)		1	(reference)		1	(reference)	
East	1,450	468	(31.7)	0.65	(0.53, 0.80)		0.80	(0.64, 0.99)		0.78	(0.62, 0.97)		0.76	(0.61, 0.93)	
North	1,249	409	(33.3)	0.70	(0.57, 0.87)		0.97	(0.77, 1.22)		0.99	(0.79, 1.26)		0.97	(0.78, 1.22)	
West	1,379	482	(35.2)	0.77	(0.63, 0.93)		0.93	(0.75, 1.14)		0.91	(0.74, 1.12)		0.89	(0.72, 1.09)	
Marital status						0.04			0.02			0.01			0.01
Unmarried	2,029	651	(33.3)	1	(reference)		1	(reference)		1	(reference)		1	(reference)	
Married	3,012	1,127	(37.2)	1.19	(1.02, 1.38)		0.61	(0.42, 0.88)		0.56	(0.38, 0.82)		0.60	(0.42, 0.85)	
S/D/W[1]	295	119	(40.1)	1.34	(0.99, 1.80)		0.77	(0.50, 1.18)		0.76	(0.49, 1.16)		0.80	(0.53, 1.21)	
Religion						0.19			0.42			0.51			
Christian[2]	2,413	890	(36.4)	1	(reference)		1	(reference)		1	(reference)				
Catholic	2,201	760	(35.4)	0.96	(0.82, 1.11)		0.97	(0.83, 1.13)		0.97	(0.83, 1.13)				
Muslim	644	237	(37.2)	1.03	(0.82, 1.30)		0.95	(0.75, 1.21)		0.97	(0.76, 1.24)				
Other	78	10	(19.5)	0.42	(0.19, 0.94)		0.52	(0.23, 1.15)		0.55	(0.25, 1.22)				
No. of children						<0.001			<0.001			<0.001			<0.001
0	2,163	654	(31.6)	1	(reference)		1	(reference)		1	(reference)		1	(reference)	
1-3	1,363	564	(41.0)	1.50	(1.27, 1.78)		2.12	(1.52, 2.96)		2.03	(1.45, 2.85)		2.14	(1.53, 2.97)	
≥4	1,810	679	(37.3)	1.29	(1.10, 1.51)		2.13	(1.44, 3.14)		1.99	(1.34, 2.96)		2.15	(1.50, 3.09)	
Wealth index						<0.001			<0.001			<0.001			<0.001

Poor	2,104	601	(28.3)	1	(reference)	1	(reference)	1	(reference)		1	(reference)
Middle	1,049	342	(32.2)	1.20	(0.99, 1.46)	1.13	(0.92, 1.37)	1.10	(0.90, 1.34)		1.10	(0.90, 1.34)
Rich	2,183	954	(43.2)	1.93	(1.66, 2.23)	1.44	(1.21, 1.72)	1.39	(1.16, 1.66)		1.44	(1.22, 1.70)
Heard about family planning through media					<0.001					<0.001		<0.001
No	1,446	359	(25.7)	1	(reference)			1	(reference)		1	(reference)
Yes	3,890	1,538	(39.4)	1.88	(1.60, 2.21)			1.48	(1.24, 1.76)		1.48	(1.25, 1.77)
Discussed family planning with a health worker					<0.001					0.001		<0.001
No	4,658	1,567	(34.2)	1	(reference)			1	(reference)		1	(reference)
Yes	678	330	(48.4)	1.81	(1.50, 2.17)			1.51	(1.22, 1.86)		1.50	(1.22, 1.85)

Note: [1]Weighted percentages account for the sampling weights and study design [2]Separated/divorced/widowed [3]Christians excluding Catholics

5.4.4 Contraceptive use among women– multivariable findings

Table 5.4 includes the Model 1, Model 2, and Model 3 logistic regression results for women. Compared to the bivariable results, in the demographic model (Model 1) the effect size associated with parity remained large, level of education became more influential, but both age and marital status diminished. The effect sizes associated with parity and education remained largely unaltered when the proximate factors were introduced in Model 2, as did the AORs for the remaining variables, suggesting negligible confounding/moderation effects in the demographic variable relationships caused by the introduced proximate variables. In developing the most parsimonious multivariable model (Model 3), both forward and backward stepwise selection methods yielded the same combination of variables. None of the significant or non-significant variables were strongly correlated with each other, so non-significance was unlikely due to multicollinearity (Table 5.5). Figure 5.1 depicts the 10-fold ROC curves derived from the women's final multivariable model. The averaged cross-validated AUC=0.714 (95% CI: 0.704, 0.720), which represents acceptable predictive accuracy.

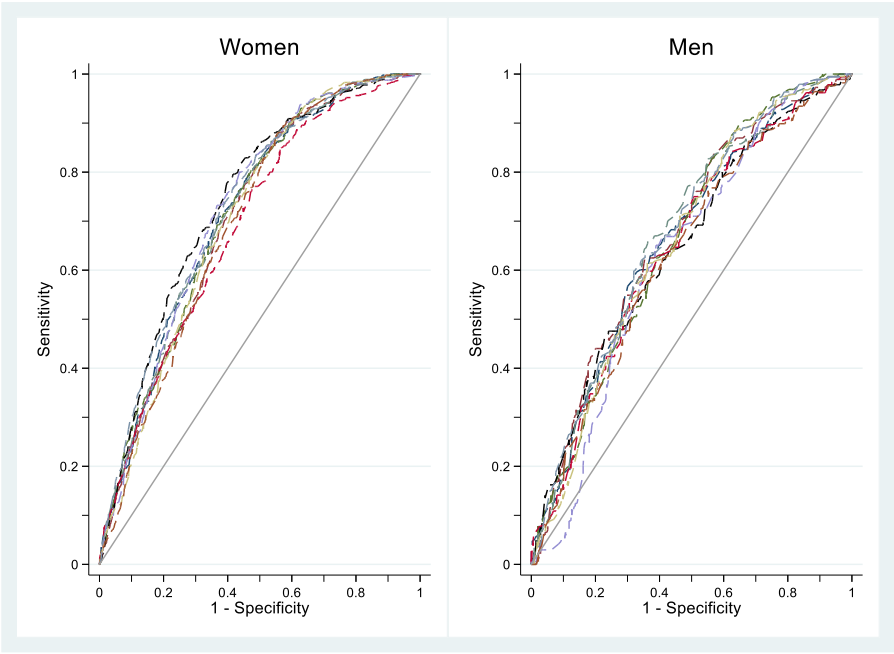

Figure 5.1. 10-fold cross-validation receiver operating characteristic (ROC) curves for Ugandan women and men derived from the final parsimonious multivariable logistic regression models (Model 3).

Table 5.5. Spearman's correlation for variables in women's predictive model.

	Age	Highest education level	Place of residence	Region	Religion	Wealth index	No. of children	Marital status	Heard about family planning through media	If distance to a health facility was a problem	If getting money for treatment was a problem	If getting permission for treatment was a problem	Discussed family planning with a health worker
Age	1.00												
Highest education level	-0.23	1.00											
Place of residence	0.03	-0.30	1.00										
Region	0.02	-0.23	0.23	1.00									
Religion	-0.00	0.07	-0.01	-0.05	1.00								
Wealth index	-0.01	0.42	-0.42	0.24	0.08	1.00							
No. of children	0.72	-0.30	0.13	0.04	-0.01	-0.14	1.00						
Marital status	0.49	-0.20	0.07	0.02	-0.01	-0.10	0.59	1.00					
Heard about family planning through media	0.03	0.19	-0.10	-0.10	0.02	0.21	0.00	0.02	1.00				
If distance to a health facility was a problem	0.04	-0.16	0.23	0.12	-0.01	-0.24	0.11	0.07	-0.10	1.00			
If getting money for treatment was a problem	0.09	-0.20	0.13	0.11	-0.05	-0.26	0.12	0.09	-0.11	0.42	1.00		
If getting permission for treatment was a problem	-0.05	-0.05	0.05	0.03	-0.02	-0.07	-0.03	-0.03	-0.06	0.14	0.15	1.00	
Discussed family planning with a health worker	-0.06	-0.02	0.00	0.06	0.02	0.01	-0.09	-0.12	-0.06	-0.00	-0.02	0.02	1.00

5.4.4.1 Contraceptive non-use among women

Table 5.6 shows the data on women's reasons for contraceptive non-use, grouped based on the response categories to the original DHS variable "Reasons for not using contraception". Fertility-related reasons were the major reason for most women to not use a contraceptive method (58.3%), followed by method-related reasons (17.5%). Lack of knowledge was the least cited reason for contraceptive non-use (0.2%).

Table 5.6. Reasons for contraceptive non-use among Ugandan women (2016).

Reasons for non-use of contraception*	Original DHS variable categories	Women	
		n	(%)
Method related	Health concerns, fears side effects, inconvenient to use, interferes with body, preferred method not available	790	(17.5)
Opposition	Respondent opposed, husband opposed, others opposed, religious prohibition	558	(12.3)
Lack of knowledge	Knows no method, knows no source	14	(0.2)
Access related	Lack of access/too far, no method available, costs too much	65	(1.2)
Fertility related	Not having sex, infrequent sex, menopausal/hysterectomy, subfecund/infecund, postpartum amenorrheic, breastfeeding, fatalistic (thinks pregnancy is determined by fate)	2610	(58.3)
Other	Not married, don't know, other	476	(10.5)

* 76.1 % of cases were missing for this variable; %s have been adjusted to account for the valid number of cases.

5.4.5 Contraceptive use among men– multivariable findings

Table 5.4 gives the Model 1, Model 2, and Model 3 logistic regression results for men. Compared to the estimated bivariate ORs, in the demographic model (Model 1) the effect size associated with education remained large, number of children became more influential, but age, marital status and wealth index diminished. The effect sizes associated with all variables remained largely unaltered when the proximate factors were introduced in Model 2, suggesting negligible confounding/moderation effects in the demographic variable relationships caused by the introduced proximate variables. Both forward and backward stepwise selection for men

also yielded identical parsimonious multivariable models (Model 3). As before, there was little evidence of multicollinearity between candidate variables (Table 5.7).

Figure 5.1 also depicts the 10-fold ROC curves for men. Here, the averaged cross-validated AUC=0.655 (95% CI: 0.636, 0.666), which falls below the threshold considered as acceptable.

Table 5.7. Spearman's correlation for variables in men's predictive model.

	Age	Highest education level	Wealth index	No. of children	Region	Place of residence	Religion	Marital status	Heard about family planning through media	Discussed family planning with a health worker
Age	1.00									
Highest education level	-0.07	1.00								
Wealth index	-0.01	0.33	1.00							
No. of children	0.80	-0.12	-0.08	1.00						
Region	-0.00	-0.11	-0.19	0.04	1.00					
Place of residence	0.01	-0.26	-0.39	0.08	0.19	1.00				
Religion	0.01	0.03	0.08	0.00	-0.02	0.02	1.00			
Marital status	0.69	-0.11	-0.09	0.77	0.02	0.06	0.01	1.00		
Heard about family planning through media	0.11	0.21	0.17	0.13	-0.07	-0.09	0.05	0.13	1.00	
Discussed family planning with a health worker	0.14	0.09	0.01	0.18	0.05	0.01	-0.02	0.17	0.15	1.00

5.5 DISCUSSION AND SUMMARY

In 2016, 26.6% of Ugandan women and 35.%5 of men were using modern contraception (an increase from 19.9% and 25.5% respectively, in 2011) (Namasivayam et al., 2019). This study highlights that factors such as education, parity, marital status, wealth index, region of residence and distance to healthcare services remain important predictors of among women in Uganda (Agyei et al., 1995; Andi et al., 2014; Rutaremwa, Kabagenyi, et al., 2015). Additionally, the study provides novel evidence that for men, education, number of children, wealth index, hearing about family planning through the media and discussions about family planning with a health worker are significantly associated with contraceptive use. In acknowledging the paucity of literature around men's contraceptive behaviour, the findings imply that health promotion interventions such as mass media campaigns and men's interactions with healthcare workers appear to have a positive effect men's contraceptive use. More significant, however, are the ORs for men's education, socioeconomic status, and number of children. This may be suggestive of the need for health promotion interventions to be implemented in conjunction with policy directives that health education and ensure adequate and affordable access to health services, particularly among urban poor and rural populations, where families tend to be bigger, less educated and of lower socio-economic status. The increases in women's and men's contraceptive use over time may also indicate a change in men's attitudes and acceptance towards contraception, and a possible opportunity for increasing male involvement in reproductive health initiatives moving forward.

There were notable differences in the ways specific predictor variables were associated with contraceptive use for women and men. For instance, education had a greater impact on men's contraceptive use compared to women's, while parity had a more significant association with contraceptive use among women compared to men. These differences could reflect how gender roles and norms influence and motivate women's and men's contraceptive behaviour

differently. For instance, the roles of child bearing and child rearing in Uganda are borne almost entirely by women (Adams et al., 2013), and therefore women who have more children may be more motivated to use contraception to reduce the possible burden of future pregnancies. Yet for men, a large family and more children often equates to a higher status in the community (Kabagenyi et al., 2016), and therefore their motivation to use contraception could be lower. A more contextualised discussion of the findings of this phase will be presented in the Discussion chapters.

The 2016 DHS sample size for women and men has been the biggest yet in Uganda, and hence the associations between modern contraceptive use and different predictor variables for women and men have substantial value in informing, tailoring and implementing future reproductive health strategies and initiatives. Predictor variables that were significantly associated with contraceptive use for women and men are also important in ascertaining sub-populations that would benefit from more focused efforts in terms of family planning service outreach and provision. Reaching these populations are particularly critical if the national goals of Uganda's FP-CIP are to be achieved by 2020 or in subsequent years. Continued evaluation and reassessment of changes in contraceptive behaviour and uptake by way of large-scale national surveys is also essential to ensuring the availability of up-to-date, empirical evidence for driving future family planning program and policy directives.

The study had notable strengths as well as weaknesses. The utilization of a large, country-level dataset based on systematic survey methodology, together with high participant response rates (97.0% of women and 94.0% of men), lent robustness to the results of this study while reducing the likelihood of non-response bias. Furthermore, the study provided an analysis of predictors of men's contraceptive behaviour in Uganda, which has been a largely understudied area in the past. However, the ROC curves indicated acceptable predictive power for women and less than acceptable predictive power for men, which suggests that there may be important unmeasured

factors omitted from the model. Additionally, the use of secondary data meant that predictive variables were predetermined – both in terms of definition and coverage. As the 'most recent' 2016 Uganda DHS is now from four years ago, a lag is likely in the observed rapid changes in contraceptive behaviours and practice. Finally, the DHS captures sexual activity for those aged 15 years and older, though many adolescents, particularly boys under the age of 15 years, are sexually active (Ariho & Kabagenyi, 2020; Lutalo et al., 2009), thereby omitting an important population group from the analyses.

The 2016 Uganda DHS dataset and 2016 Uganda DHS final report indicated the Busoga region of east Uganda as having high unmet need for contraception (36.5%) relative to other regions in the country (except for the West Nile and Acholi regions in the North, which were the most conflict-affected areas in Uganda).This was also observed in the associations of contraceptive use by region in both quantitative studies. These findings provide the context for the next two qualitative phases of this project, which explore in depth the factors and barriers that affect women's and men's contraceptive use in the Busoga region.

6 QUALITATIVE PHASE 1: FOCUS GROUP DISCUSSIONS WITH WOMEN

6.1 INTRODUCTION

Existing literature on unmet need among women in Uganda has identified several determinants that influence contraceptive decision making and behaviour, which were described in Chapter Two (section 2.5). The quantitative studies presented in Chapters 4 and 5 further highlighted important enablers and barriers to contraceptive use among women and men at the country-level. The motivation for this first qualitative phase was to gain a better understanding of why unmet need was high among women in the Busoga region of east Uganda, as reported in the DHS data from 2016. Six FGDs were conducted with women, stratified by age (18-24 years, 25-34 years, 35 years and older) and urban/rural living. Details of the methods and procedures employed have been described in the Chapter Three (section 3.6.1.1). A summary of the FGD participants' data can be found in Appendix F.

A thematic analysis identified four major themes across the FGDs (Figure 6.1). These themes largely focused on how women navigate contraceptive use and gender norms within a patriarchal context (Theme 1), the influence of culture and the community on women's contraceptive use (Theme 2), the importance of women's own experiences and motivation in contraceptive decisions (Theme 3), and the challenges presented by the health system in accessing contraception (Theme 4). These are explored in greater depth in the sections that follow. Where direct quotes are used, UW/RW refers to urban/rural FGDs, followed by the age group of participants of a particular FGD, and the participant number if applicable; e.g. *UW_18-24* indicates a quote from an FGD with urban women aged 18-24 years; *RW_over 35_2* indicates a quote from participant #2 in an FGD with rural women aged 35 years and older.

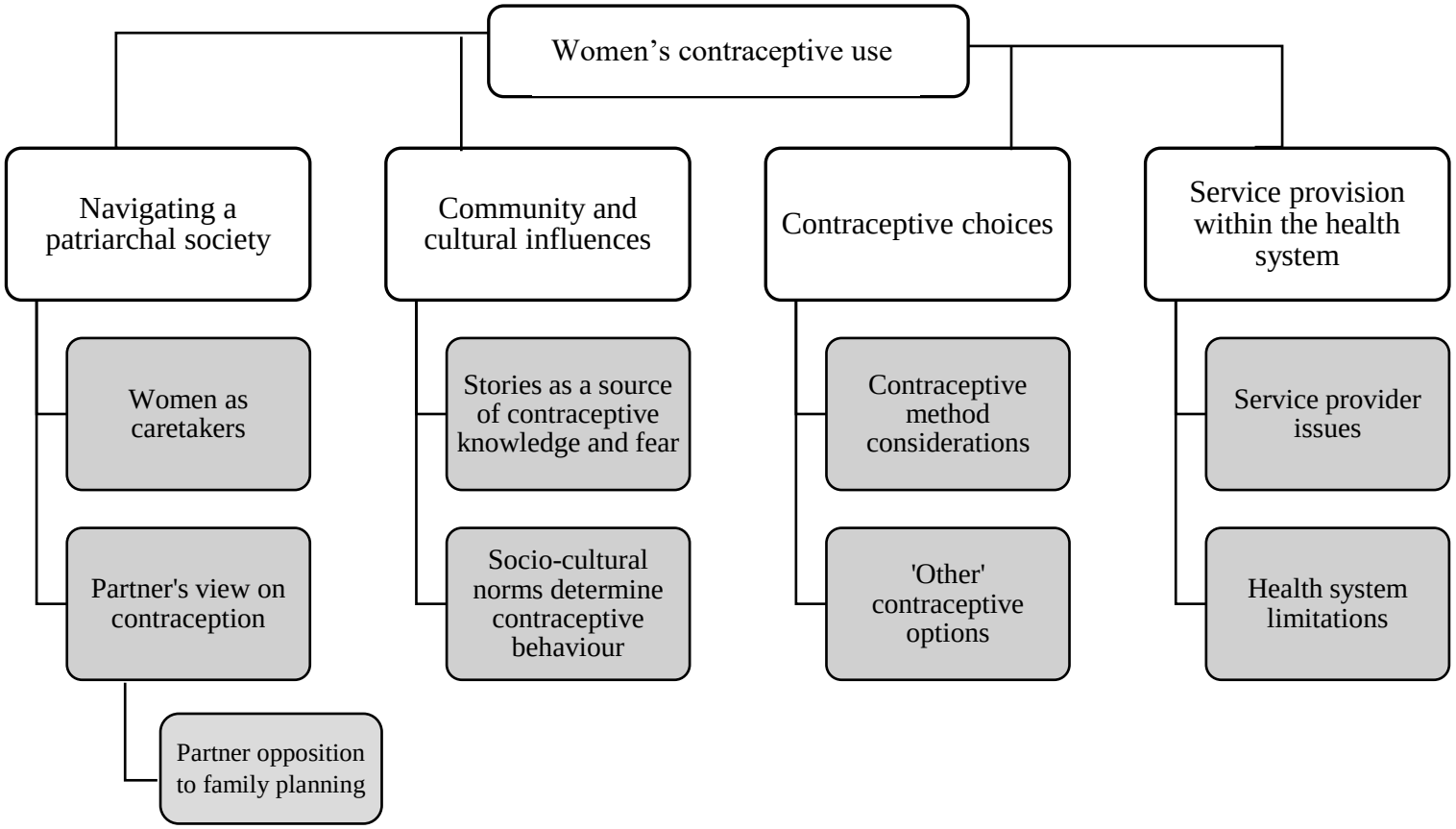

Figure 6.1 Thematic map from women's FGDs

6.2 THEME 1: NAVIGATING CONTRACEPTIVE USE WITHIN A PATRIARCHAL SOCIETY

Previous research on the impact of gender norms on reproductive health behaviour in Uganda has highlighted male-dominated decision-making, spousal communication and patriarchal norms and practices as key influences (Ghanotakis et al., 2016; Kabagenyi et al., 2016; Paek et al., 2008). Reports on contraceptive use in Uganda have similarly stated that men are often the primary decision-makers, while the implementation of these decisions are left to their partners (Blanc, 2001). As an indirect consequence, most family planning programs have been predominantly geared towards women's utilization of services, thereby perpetuating the notion that family planning is a woman's 'business' (Kabagenyi, Jennings, et al., 2014).

The specific gender roles occupied by women and men in a relationship and the dynamics of how those roles play out were raised by participants throughout the FGDs as a significant factor influencing contraceptive decision-making and uptake. While contraceptive use was considered to be a woman's role, men's approval was central to women being able to use contraception, as one respondent articulated: "My husband encourages me to go for family planning […] but he almost decides each and everything." In this case, the participant's partner happened to be supportive of her contraceptive use. Other participants similarly reported *having to* consult their partners about contraception, their partners then making a decision on the matter, and women subsequently complying with this decision.

6.2.1 Women's roles as the primary caretakers of the family and home

When it came to managing one's family and raising children, participants described different roles for women and men. Respondents talked about a woman's role in looking after her family and the home, and that women were expected to assume responsibilities around caring for

children. Men, on the other hand, were perceived to be interested in having many children but not necessarily concerned with their upbringing:

> *They* [men] *don't think about it apart from just producing… he doesn't even take care of educating them, as long he produces 'full stop'.* - *RW_25-34*

> *Men nowadays don't think about their responsibilities and you remain with the responsibilities alone so you think of getting many children but for what! You just decide to use family planning.* - *UW_25-34*

The second quote reflects the perspective that women felt alone in shouldering the responsibility for managing the size of their family. Some women described both the financial and educational benefits of family planning, even though such concerns were conventionally the purview of the man in a family, as one respondent explained:

> *For me I decided because of the family status… many children but the affordability was less. Because even if they send a child from school because of lack of a book, he* [the husband] *will just keep quiet… and the child will go to their mother. You get your money and give to the child. So I decided that if am failing to take care of the six children, what if they become eight, what will happen? So I have to persist on the injectables. – RW_over 35*

The other benefits of family planning mentioned by respondents included better child health, having more time to take care of their children, and older children being able to help out with the younger children. One participant remarked, "For me, I want a baby to make 10 years and then I get another when he understands very well... he can do home duties like taking care of his sibling". Some of the sentiments below were in line with aforementioned views that women

had to take on the bulk of child rearing in a family, and therefore were solely responsible for contraceptive use:

> *I know once I get another baby early they will not have a good life, so it's me deciding to go for family planning. - UW_18-24*

> *For me I think a child gets enough parental love when you go for family planning but if you have many young children, you get fed up of them and at times the children get stunted so you go for family planning so that the child gets love with their mother. - UW_25-34*

For many women, these factors also contributed to an overall better quality of life that they and their family were able to enjoy, as one participant stressed, "We don't want to produce unwanted children and Uganda is expensive!" Family planning afforded many women better economic standing for managing their families, particularly when costs of living were rising:

> *Giving birth to children without good spacing makes one poor because as they keep falling sick, you use the money for treatment instead of investment. - RW_18-24*

> *If I don't go for family planning and I have too many babies, there is no economic development because you can't do anything else apart from caring for your children but if you have, for example, one grown up child, you can do something developmental. - RW_25-34*

Some women also talked about the freedom they had to seek employment and the subsequent financial independence they were able to enjoy when they better spaced their pregnancies:

Family planning has helped me, how? I would be having three children right now but because of family planning, I have one child and I have my freedom as a person, I enjoy life, my body is healthy and I don't have any stress and I make my money. - UW_25-34

The better financial status of smaller, well-spaced families is a recognised benefit of family planning (Pitorak et al., 2014), and is strongly reflected in the above quotes as an important factor that women consider in their decisions to use contraception. Though financial support of a family has traditionally been a man's role, women have had to become more involved in this over time because of the rising costs of living in Uganda (Silberschmidt, 2005). For many women, the spacing of pregnancies and limiting of children helped to ease the financial burden that came with supporting a family.

Expanding on this point, a few women mentioned that their ideal family size comprised of between four to six children, but that a family should be planned in accordance with their income and what they could afford to provide for their children. As one respondent summarized, "A person could have any number of children, as long she or he is capable of caring for them". When asked about how many children their husbands or partners wanted, most women reported their husbands wanted many more children than they did. The excerpt below from a FGD with rural women aged 25-34 years highlights this:

Facilitator: How many children would your husbands like to have?

RW_25-34_1: Our husbands would even want to have 10 children…

RW_25-34_2: Even mine is like that, he wants 10... (laughs)

RW_25-34_3: Mine wants even 20! (laughs)

RW_25-34_4: Yes… men don't get tired of producing but it's the woman to limit herself.

Discordant fertility desires between men and women regarding the number of desired children and ideal family size has been reported previously in the literature, with men usually wanting more children than their partners (Bankole & Singh, 1998). Coupled with a lack of spousal communication on these matters, as well as men's expected and accepted role as primary decision maker, women are often unable to negotiate contraceptive use (Sileo et al., 2017). Many participants were concerned about frequent or several pregnancies, which could further impact their own health as well as the health and wellbeing of their families; as one respondent stated, "It [family planning] may be bad but I must decide because I am the one who suffers with the children." These women's circumstances strongly motivated them to exert their own agency in seeking out contraceptive services to space or limit subsequent pregnancies.

6.2.2 Contending with men's attitudes towards contraceptive use

Several younger participants (in the age group 18-24 years) had positive views to share about their partner's support of contraceptive use. For these women, spousal communication about family size and family planning was less constrained; respondents were comfortable discussing these topics with their partners, and wanted them to be involved in family planning decisions, as one participant explained, "…how one decides, it depends on the number of children I have and my financial status, but also the agreement I make with my husband regarding use of family planning." For some women, their partner's support was a factor that enabled them to pursue family planning, as described by one participant: "It is my husband who takes me to the health facility for family planning and even if I get problems he takes me back."

Very few studies have looked at how gender norms in Uganda have evolved over time, and how these could influence younger people's attitudes and contraceptive behaviour. However, as described in section 2.5.7, a few studies do report a trend among younger people of wanting

smaller, well-spaced families, which sometimes has meant challenging existing gender norms and societal expectations in order to achieve this (Adams et al., 2013; Nalwadda et al., 2010). The comments from younger FGD participants may be reflective of these changes. Results of more recent initiatives and programs around family planning have also shown that younger Ugandans, particularly educated men, have different attitudes and opinions about family sizes, and are more open to the use of family planning for spacing and limiting of pregnancies (Ghanotakis et al., 2016; Stern et al., 2015). That younger women felt more comfortable and open with their male partners in reproductive health discussions may be an indirect result of this change in mind set among younger Ugandan men, together with an increased openness and awareness around reproductive health.

While their partners were more supportive in general, younger participants were more conscious about pleasing their partner and respecting their authority, and were more likely to acquiesce to their partner's wishes. As the quote below implies, their partner's happiness was a priority, whether that meant keeping him informed or coming to an agreement about contraceptive use. This could reflect a spousal dynamic that was more common among younger women:

> *They* [husbands] *are happy too, because once you agree with him on the decision to use family planning, he should be happy, but if you don't agree and do it secretly, definitely he will not be happy. - RW_18-24*

Older women, both in urban and rural areas, were less comfortable with or unable to have discussions about contraceptive use with their partners. Partner opposition was framed as a common challenge they faced. One respondent explained: "You will find that out of 10 women, only one tells the husband. But they go in a secret way without him knowing." These older respondents seemed comfortable defying their partners' wishes, and openly talked about ways

in which they subverted partner opposition through covert contraceptive use, mainly through using injectable contraceptives. Injectables such as Depo-Provera and Sayana Press were more popular due to the ability of women to conceal their use. Respondents also explained that they offered women logistical convenience, only requiring a repeat visit to the clinic every three months for a new dose (Hyttel et al., 2012; Kibira et al., 2015). However, the associated risks and consequences that women face, if discovered by their partners, can be severe and include violence, being abandoned or 'chased out' (Orach et al., 2015; Shumba et al., 2016; Sileo et al., 2017). Despite acknowledging the risks of such consequences, these women felt they had no other choice but to seek out contraception for themselves, and justified covert contraceptive use as a means to an end in their situations:

> *A man will produce with you many children and you will become old and even lose your figure so it's upon you to decide. - UW_25-34*

> *My husband doesn't want family planning yet for me I want to go for family planning because of the responsibility I have, I go without his knowledge so he keeps wondering as to why I don't get pregnant. - UW_over 35*

Other older respondents reiterated that attempts at a discussion about family planning with their partners were pointless and in the interest of avoiding conflict, they tackled these situations by not engaging in a discussion at all:

> *For me I just go I don't tell him (laughs) ...now why should you tell him? Because he will ask you many questions...so I think among 10 men, only one believes in family planning. - UW_over 35*

> *I just go for it without him knowing… (laughs) - RW_over 35*

While spousal communication and joint decision-making has been associated with increased contraceptive use in many studies (DeRose et al., 2004; Paek et al., 2008; Williamson et al., 2006), few interventions have shown success in achieving sustained changes to couples' communication over time. In the absence of such discussions, covert contraceptive use has long been acknowledged as a way for women to exert control over their reproductive health, manage the size of their family and look out for the welfare of their children (Biddlecom & Fapohunda, 1998; Castle, Konate, Ulin, & Martin, 1999; Nalwadda et al., 2010). For these respondents, covert use seemed to be an ordinary and accepted practice, an 'open' secret among most women and health care providers, held together by a shared understanding that this was the only option available to many women.

6.2.2.1 Partner opposition to contraception

One of the main reasons for partner opposition perceived by women respondents was related to their own experiences with negative contraceptive side effects (e.g. loss of libido, or excessive bleeding) that subsequently interfered with their partners' enjoyment of sex, as the except below indicates:

> *He gets angered so much and if I lose libido, he will not enjoy sex…so he gets annoyed with that and secondly, he would love to give birth to children in time (laughs) and on finding out that I am on family planning he will get annoyed. - UW_25-34*

The quotes below provide further illustrations of the challenges and consequences faced by women in these situations. In addition to demonstrating typical power dynamics within spousal relationships, these accounts also highlight the expectations that women should please their

partners sexually in a relationship, with more emphasis being placed on a man's sexual pleasure compared to a woman's:

> *Mine does not allow family planning, they will run away from us because of family planning… because some women bleed every day, a month, two months and we don't have libido so if a man gets another partner, the marriage will break up (laughs)… I am not lying. - UW_25-34*

> *For me I think you should call these men who take care of us and you advise, teach and counsel them about family planning because once we have side effects of family planning like loss of sexual desire, they start beating us up so I call upon you to also talk to these men so that they may know something about family planning like us otherwise they will continue beating us up. - UW_25-34*

Being unable to fulfil their expected sexual role due to contraceptive side effects has been reported to put women at risk of spousal retaliation through violence, their husband ending the marriage, or taking on an additional wife or sexual partner (Kabagenyi, Jennings, et al., 2014; Shumba et al., 2016; Sileo et al., 2017; Wolff, Blanc, & Gage, 2000). As mentioned by the participant above, intimate partner violence has also been previously linked to power differentials dictated by gender norms within relationships, and is a way in which men can exert control over women's reproductive choices (Wandera, Kwagala, & Odimegwu, 2018). Though the effects of violence on women's contraceptive use in SSA has shown varied results across countries, there is a clear link with how it negatively impacts women's autonomy within a relationship and their subsequent ability to seek healthcare (Alio, Daley, Nana, Duan, & Salihu, 2009; Nalwadda et al., 2010; Sileo, Wanyenze, Lule, & Kiene, 2015).

A few younger women cited the costs and hassle associated with side effect management as reasons for their partners being opposed to contraceptive use. A sense of fear was apparent in some of their comments, which may be reflective of spousal power dynamics that younger women had to contend with, especially if these side effects impacted their partners financially:

> *I told my partner after delivering that I wanted to go for family planning until the baby is three years but he refused and told me that if I get any problem I would care for my own self, so I was scared. - UW_18-24*

> *Me and my partner, it had made him happy but then I bled for long time so he told me that 'you wait before going back!' because he had spent a lot of money. - UW_18-24*

It is apparent from these comments that partner opposition to contraception is still a reality that many participants contended with. Few participants however, linked partner opposition to contraceptive use solely as being a way of their partners asserting their power and authority. Rather, partner opposition was attributed to the loss of sexual pleasure, concerns about family planning methods and side effects, and the financial inconveniences of side effect management.

The above theme illustrates the complex interconnectedness of gender roles, power dynamics, male-dominance and the expectations of women and men in a relationship, and how these can influence women's decisions and actions around contraceptive use. Despite progress in the areas of gender equality and equity in several African countries over the last few decades, many countries, including Uganda, are still represented by largely patriarchal, patrilineal, male-dominant societies, norms and practices (Paek et al., 2008). Such norms discourage or impede spousal communication about family size and spacing between pregnancies, and enforce the expectation that women must respect and conform to the decisions made by their partners (Nalwadda et al., 2010; Paek et al., 2008; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). As a

result, women and girls are often passive partners in discussions and decisions around health, fertility, and family size; as Kabagenyi et al. (2016) state, "Women are encouraged to be obedient and do as their husbands please". These prescribed gender roles and power differentials dictate to a large extent the health-seeking behaviour that women are allowed and able to engage in, thereby restricting their agency to adopt contraceptives (Blanc, 2001).

Though there have been many programmatic attempts to better engage men in family planning discussions (Stern et al., 2015), as well as examine and discuss existing gender norms that are harmful to the health and wellbeing of women (Ghanotakis et al., 2016; Wegs et al., 2016), there still exists much work to be done in in the area of male involvement. However, as some of the evidence has shown, the slow changes in attitudes and ways of thinking among younger Ugandans is hopeful. Coupled with the overall increasing rates of contraceptive use in Uganda, particularly among men (see section 4.4.5) (Namasivayam et al., 2019), this may indicate a slow paradigm shift with regard to gender norms and fertility preferences among younger generations. Such developments could signal an eventual change in couple communication and decision-making around reproductive health.

6.3 THEME 2: THE INFLUENCE OF CAUTIONARY TALES AND CULTURE ON CONTRACEPTIVE USE

Uganda is a largely collectivist society where the strength of ties and relationships within one's community are critical to continuing cultural norms and socially acceptable behaviours, including behaviours related to health (Vaughn, Jacquez, & Bakar, 2009). Previous work in this area has shown community expectations, fertility norms and affluence to have an effect on maternal health and child spacing decisions (McGuire & Stephenson, 2015; Paek et al., 2008). Societal norms about women's roles in marriage and childbearing within communities have

also shown to influence contraceptive decision-making and uptake (Kabagenyi et al., 2016; Shumba et al., 2016).

These concepts were also brought up by respondents as underlying yet significant factors in their contraceptive decisions and uptake. Testimonial information and community beliefs were integral in shaping the attitudes of women towards contraceptive use, as well as being a source of caution and fear. Socio-cultural norms appeared to differ in their affect across the life course among women; for example, younger women talked more about societal pressure to have a child soon after marriage, while older women spoke about how the practice of polygyny influenced their contraceptive behaviour.

6.3.1 Stories from peers communicate contraceptive knowledge and fears

In discussions about women's knowledge and opinions about different contraceptive methods, the value and significance of others' experiences and accounts seemed paramount. Many of the respondents' comments were preceded by words such as 'they say' or 'people believe'. These accounts were relayed as the beliefs of other women in the community who were either friends, neighbours or relatives of the participants, and was common across women of all ages, and both in urban and rural areas.

A few of the testimonies described were positive, and centred on the benefits of family planning. This was particularly common among younger respondents, who highlighted positive aspects such as better health and education of children in a well-spaced family, and an overall better quality of life:

> *People have a thought that once they go for family planning, their children will attain better education, because they would have planned for them. - RW_18-24*

> *People in our community believe in family planning because once you space your children, they don't fall sick so often, and even if you have a journey* [travel], *you may not be bothered so much because of the children.* *- RW_18-24*

Most participants, however, talked about the harmful consequences of family planning. These centred on negative and sometimes dire health effects that participants had heard of from other women. It was unclear if these accounts were based on personal experiences of other women, or were stories that had circulated in the community over time. Participants' reliance on other women's accounts in the community was also apparent from their level of narrative detail around specific family planning methods, as seen in this quote:

> *I was somewhere in Busalamu Health Centre II and women who were using* [the] *injectable method told me that they feel fatigue, their legs pain and even their hands cannot lift a hoe and* [they] *feel as if the intestines are burning inside the stomach so I do not know what causes that. - RW_over 35*

A high level of detail and certainty of contraceptive side effects came through clearly in the above comment. Similarly, some respondents related compelling accounts of other negative experiences that they had heard of:

> *I have my sister-in-law, she used family planning when she had given birth to four children but she now has swellings in her abdomen but she has treated those swelling but they don't heal and she wants to produce girls but she has failed... because of family planning, an injection.- UW_25-34*

I went to someone in the Iganga main hospital, I knew she was my friend and I told her that I wanted family planning but she told me not to go for family planning because it would affect me and she gave me an example of a certain lady, family planning destroyed her kidneys and she was never again to conceive... so don't go. - UW_25-34

In many instances, participants spoke of health problems that are not commonly associated with family planning, such as cancer; however, there seemed to be a sense of conviction that contraceptives caused these conditions. The statements below are further examples of a collective, shared sense of fear around side effects which seemed deeply embedded in these women's communities:

Family planning… some women aged 60, 50 and 40 say that they are getting cancer because of that family planning... that whoever uses family planning is suffering from cancer… that's what people say. - UW_25-34

People in this community think that family planning came to affect people like the use of pills, you may swallow and by the time you want to deliver they check when your uterus has been interfered with and say that the eggs (ovaries) are 'burnt'. - UW_18-24

Another common fear among participants was that contraceptive users were more likely to give birth to children with deformities, presumably as a consequence of the damage to women's reproductive health from contraceptive use. These accounts appeared to convince respondents that family planning was 'bad' because they came from peers, relatives and other women in the community who were trusted. However, none of the respondents seemed to personally know anyone who had experienced these first-hand, as is apparent in the phrasing of these quotes:

> *...for me I feared it* [family planning] *and I hear that some women went for family planning and produced children with deformities like having one eye* […] *they say it's because of family planning. -UW_over 35*

> *Some people in our village don't believe in family planning, they feel family planning is bad, it damages women. Once you go for it and get pregnant, afterwards, you give birth to children with deformities. Some body parts may be missing. - UW_18-24*

The beliefs that cancer, infertility and congenital deformities are caused by contraceptive methods are some of the more common misconceptions that were described in section 2.5.4 as being a barrier to women's use of contraception (Ayiasi, Muhumuza, Bukenya, & Orach, 2015; Kabagenyi et al., 2016; Kibira et al., 2015; Morse et al., 2014; Rutenberg & Watkins, 1997; Shumba et al., 2016). Many reproductive health and education programs at health facilities and community-level discussions about family planning led by VHTs and mobile outreach clinics have sought to address these (Gueye, Speizer, Corroon, & Okigbo, 2015; Parks, 2019). However, given the collectivist ways in which knowledge and information are regarded and shared in Ugandan society, many of these beliefs continue to be perpetuated. The power of these testimonies override information about family planning from other sources due to a sense of trust among peers in a community, particularly in informal and social networks among women. Differing views of family planning among age groups could reflect a difference in the accounts that respondents were exposed to, and who they heard these from. This aligns with research indicating that misconceptions about contraception continue to exist among older people in the community, while younger people may be more educated about contraceptives and possible side effects, and have sources of information outside the community (Asiimwe et al., 2014).

Some of the concerns women had were regarding known contraceptive side effects, such as excessive, continuous bleeding or missed menstrual periods, discussed in section 6.2.2.1. Weight changes and a loss of libido were also common complaints, as a few respondents described, "You become too fat or too thin and you become too weak at the same time"; "People say family planning makes you to become dry in private parts…" Women who were covert contraceptive users were also fearful of these side effects as it was a way for their partners to potentially discover their contraceptive use, as the quote below indicates:

> *When you go to family planning you lose libido and you become weak…and when the man discovers that you went for family planning without his knowledge, he beats you up and even the marriage may break up, so that is why people don't want to go for family planning, that you become sickly. - RW_25-34*

A few women, however, were sceptical about the harms and negative beliefs around contraception. It was evident they based these opinions on their own experiences and the benefits they had derived from family planning:

> *Some people say that once you go for family planning you don't produce, you become barren… so they discourage people but I think they are lying because for one I have used it when I was still at school but when I dropped it, I gave birth immediately. - UW_25-34*

> *Those who complain about family planning are old people majorly (laughs)… yes I am not lying like my mother she says family planning can even make you mentally ill so don't go for it... For me when I go for an injection and it affects me, I go for pills. - UW_25-34*

The last sentence of the above quote also speaks to the participant's agency in switching to a different contraceptive method when her first method choice was not optimal, rather than trusting the beliefs she had heard about the side effects of contraception.

As the preceding sections indicate, the majority of participants were fearful of negative contraceptive side effects, both real and perceived, even if these were based on stories they heard from other women. Misconceptions related to contraceptive use including those mentioned above, have been reported extensively in the literature over the last two decades (Kibira et al., 2015; Morse et al., 2014; Nalwadda et al., 2010). Hence the fact that most participants still believed these to be true is concerning, and may indicate limitations of health education efforts in these communities, and a lack of understanding of the ways knowledge is shared and regarded in collectivist societies. Women held the opinions and experiences of other women in the community in high regard, and informal networks among women were an important source of information (Alege, Matovu, Ssensalire, & Nabiwemba, 2016; DeRose & Ezeh, 2010; Rutenberg & Watkins, 1997).

6.3.2 Socio-cultural norms shape contraceptive behaviour

Participants discussed some of the cultural and societal perceptions of family planning in their communities that either directly or indirectly influenced contraceptive uptake. An example of this was the association of promiscuity and infidelity with women who are contraceptive users, particularly if they were young or unmarried women, which previous studies have also cited (see Adelekan et al., 2014; Kabagenyi, Jennings, et al., 2014; Mosha, Ruben, & Kakoko, 2013; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). One participant explained the difficulty such stigma posed for women seeking contraception: "They [young women] face challenges because people talk about them, that what has really forced that young girl to go for family

planning! Is it because she is in love with many men?!" Several participants also reiterated the perception that married women who use contraception were thought to be prostitutes by their community. While respondents did not personally hold this opinion, they explained that the reasoning for this association was driven by the idea that women involved in extra-marital affairs could get pregnant with another man's child, and therefore used contraceptives to protect themselves.

Another cultural norm mentioned by participants that impacted contraceptive use was the expectation for women to have their first child soon after marriage, an expectation usually held by parents or in-laws. Contraceptive use after marriage and before having one's first child was therefore discouraged, or frowned upon:

> *There are people* […] *who feel bad when we go for family planning… like the mother of our partners, they say that "she doesn't produce, she is just eating food because she went for family planning" so it affects them…"Why do you go for family planning before the grand parents are named?" some mothers say. - UW_18-24*

> *Even your mother doesn't encourage you to go for family planning. She says that "for me I gave birth to many of you, and you have also to be like me". - UW_25-34*

As discussed in section 2.5.1, such family expectations can be a source of pressure for young, newly-married women to have children as soon as possible, and thus deter contraceptive use (Kabagenyi et al., 2016; Shumba et al., 2016). In some contexts, this expectation has been linked to the practice of paying a bride price, a tradition where a man's family pays his future bride's family a sum of money in exchange for her hand in marriage. The new bride is then considered to be *owned* by her husbands' family, and is often subject to the demands of her

husband and in-laws, including being pressured into having children as soon as possible, though she may not necessarily want to at the time. Village elders and older women in the community have also been recognised in past work as being authoritative figures whose opinions and advice around fertility norms are held in high regard (Adams et al., 2013; Nalwadda et al., 2010). Often, older women would strongly advocate for the traditional socio-cultural norms and practices they were subject to (such as having a child soon after marriage, and having many children), despite the changes in societal and financial contexts that have occurred for younger generations over time. Younger women and couples therefore find themselves in the difficult situation of directly defying such expectations if they want to space or delay pregnancies.

As part of the general discussion around cultural norms, participants also cited religious beliefs as a challenge to contraceptive use, particularly within the Islamic and Catholic faiths. Religious leaders and devout followers of these religions often discouraged the use of family planning, and so women belonging to these religions faced additional challenges with contraceptive use, as two Muslim participants explained:

> *…we Muslims say that once you go for family planning it means you are killing children in your womb, yet Allah says don't. So even if you did many good things Allah can't forgive you because he refuses to kill, so we follow our law. - UW_18-24*

> *…the Muslim faith orders to produce until the ovaries get finished so it prohibits us from going for family planning but we disobey. - UW_ 25-34*

Some women also attributed their partners' views on contraception to religious reasons:

> *When family planning had just started, I told my master* [husband] *about family planning but he said that I am a witch and I wanted to kill babies from inside the womb (laughs). So after that it becomes impossible and he emphasizes that Muslims don't go for family planning…but for us, let Allah forgive us... we just do it because of the conditions. - UW_over 35*

The power and significant societal role of religion in Ugandan society has been acknowledged as a key determinant of contraceptive use in previous work (see Kabagenyi et al., 2016; Nalwadda, Mirembe, et al., 2011; Orach et al., 2015). Religious community leaders in particular have been cited as exerting influence over contraceptive decisions and choices of members in their congregation (Kabagenyi et al., 2016; Sundararajan et al., 2019), particularly if their faith has a definitive anti-contraception stance. Though the first respondent's quote placed more emphasis on following the rules set out by one's religion, particularly when contraceptive use was viewed as killing unborn children, many participants did admit to 'disobeying' this religious precept and seeking out contraception anyway, as evident in the other respondents' quotes.

A few older respondents raised the subject of polygyny, the practice of men having multiple co-wives or partners outside their own marriage, being common in their communities. In the traditional context of Uganda, men often desire large families due to the status and social standing this practice offers in their community, and polygynous relationships are one way of achieving this (Kabagenyi, Jennings, et al., 2014; Kabagenyi et al., 2016). Though this socio-cultural norm has slowly changed over time in response to increased costs of living, the mind-set around having large families is still prevalent in many parts of Uganda, particularly in rural

settings (Ouma et al., 2015). Respondents explained that polygyny gave men the option of having a larger family as multiple wives could have more children each, and consequently a man's desire for several children was easier to meet. One participant related: "My husband does not want any child from me anymore but he has another wife and he thinks that the ones from my co-wife will be brighter so he is continuing to produce." In many instances, respondents were aware of their partner's other wives or partners; the quotes below, from a group of respondents aged over 35 years, highlight some of its implications of polygyny for women like themselves:

> *Men are like that… because I have six children with him but he has other women… he has his two children elsewhere and plus the six those are eight and* [he] *is still producing. - UW_over 35_1*

> *Our husbands are not cooperative… they get many women and produce in everyone they get (laughs)… and their saying is "men should produce outside their marriage", that the ones he gets outside may be brighter and they are not willing to stop producing but it is our effort as women to stop producing. - UW_over 35_2*

> *For me I think women should have our own number of children we wish to have and our partners have their different number. - UW_over 35_3*

The last two respondents' comments about women limiting their number of children is another example of women exerting their own agency when it came to their fertility choices and contraceptive use. This was particularly evident in situations where women assumed their partner was opposed to contraceptive use as he still wanted more children. If their partner had multiple wives, women may have less autonomy and negotiating power in their individual relationships, and possibly had to contend with competition from other co-wives

(Bingenheimer, 2010). Many of these women would then resort to covert contraceptive use to retain some control over their fertility.

From the excerpts above, the influence of socio-cultural norms and community perceptions on reproductive health and contraceptive use remains a critical factor for women. That respondents were conscious of the opinions and testimonies of 'other people' in the community was once again evident in their descriptions of respecting and adhering to cultural norms and expectations. This was particularly significant when it came to the opinions of extended family members, which in turn impacted women's decision-making and use of contraception. Village elders, older family members and in-laws, in particular, are known to have great influence over newly married couples and fertility decisions (Kabagenyi et al., 2016). Social capital in the community, particularly via one's relationships and networks, has also been linked with contraceptive use (Paek et al., 2008). Together with socio-cultural norms that allow polygynous relationships, discourage premarital sex, dictate expectations around family size and how soon after a marriage a child is expected, these multi-level factors often interact and interweave with each other to influence a woman's contraceptive behaviour and decisions.

6.4 THEME 3: WOMEN'S CONTRACEPTIVE CHOICES ARE GUIDED BY EXPERIENCE, HARDSHIP AND MOTIVATION

Women's decisions around contraceptive use and method choice can be heavily influenced by their own prior experiences, the experiences of their peers as well as the perceived benefits or challenges that contraceptive use poses to them (Alege et al., 2016; Anguzu et al., 2014; DeRose & Ezeh, 2010; Kibira et al., 2015; Rutenberg & Watkins, 1997; Tibaijuka et al., 2017). These topics were also raised by respondents in relation to influencing and motivating their

contraceptive method choice. Unless otherwise mentioned, the discussions in the following section revolve around the use of modern contraceptive methods.

6.4.1 Contraceptive method considerations and choices

Women who were contraceptive users mentioned a few considerations that were pivotal in their choice of a contraceptive method. Convenience was a critical factor, particularly when it came to deciding between a short- or long-term method. The hassle of adhering to a daily routine with some short-methods was emphasized by one respondent, particularly if this had to be done surreptitiously:

> *The disadvantages with some methods of family planning is that you get inconvenienced especially when you don't count the days so well and yet at the same time you have kept it as a secret to your husband. Another one is pills which you may easily forget and miss a day or so. - RW_18-24*

On the other hand, respondents who had used long-term methods brought up the inconvenience and costs of having to revisit a trained professional for their implant (or more rarely, IUD) to be removed. Many had since switched to a short-term method:

> *For me I use Injectaplan but I don't have any problem* […] *You don't suffer to go there, to look for the doctor, as it happens with IUD. With IUD you have to deal with the doctor who inserted it and when you find him, they don't remove it. An injection is easier to drop. - RW_25-34*

The reason I prefer an injection is because an IUD takes three years and if you want to remove it before it expires, they tell you to pay 20,000 to remove it… and pills would work better but you may forget to swallow them and even the IUD we fear that it has side effects, making us just left to use injections. - UW_25-34

Women's familiarity and satisfaction with a method was also key in deciding which method to use, as one respondent said, "For me I decide once, say on pills or injectables, because it's I want… Because I am used to that and I have enough experience in it and it's what I know and can manage." When asked if they were satisfied with their current method of choice, participants responses were mixed; some women continued to use a method because the perceived benefits outweighed the challenges they faced, but other women switched or discontinued methods due to side effects. Some participants shared their own personal accounts of the negative side effects of contraceptive use they had experienced. These were mostly related to menstrual irregularities, as well as health effects and pain that interfered with their daily activities, particularly when manual labour was involved:

Family planning makes us women weak, we feel dizzy, back pains and you can't walk for a long distance because you feel fatigue. - UW_over 35

I am using Injectaplan but it is not doing me good because I get many pimples in the face and when I go to my periods I can menstruate for two days and then after another two days thinking that I am done I again menstruate, so you menstruate for almost a full month…and another thing you feel your heart beat rapidly (palpations) and that it causes the legs to pain. - UW_25-34

The management of these side effects became problematic when participants had to make repeat visits to the clinic, or bled for very long periods of time. This was another reason for women to opt for short-term methods, as one respondent clarified, "For me I remain on a short-term method because once things get tough, I drop it and go to another."

Some women said they had experienced no side effects using a particular method, though other women had reported negative experiences with the same method, as one respondent said, "That injection she talked about, I have used it but I didn't get any problem with it." In some focus groups, these accounts seemed to counter some of the misconceptions that other participants had heard in the community, which then prompted further discussion among the respondents. One respondent summarised her thoughts on why there were mixed perceptions about family planning among women in her community:

> *For me what I hear is the diseases that family planning brings… but when family planning works for someone, she praises it but if it does not work, one blames it… and they decide not to go back for it. - RW_over 35*

Her views highlight the range of women's individual and different experiences with contraceptives, and how these experiences shaped their opinions and subsequent contraceptive behaviour. As mentioned above, some women acknowledged that while they were unhappy or inconvenienced by contraceptive side effects, on the whole they still benefited from contraceptive use, and therefore persisted despite the challenges they faced:

> *For me I am not happy because I don't go into my periods as usual but I may have scanty blood, then after two days, I bleed again and I feel headache and pain in the legs so I have problems with but it has helped me not getting pregnant. - UW_18-24*

I am using family planning and it is good; I am not giving birth to another baby too soon so there is child spacing but nevertheless we get some problems like irregular menstruation… so that even when I move to my friend I fear to associate with them because I think that may be blood on the clothes... - UW_25-34

The challenges women faced with irregular menstruation and pain once again came through clearly in their comments; however, these seemed to be outweighed by their ability to avoid unwanted pregnancies and space children.

The use of family planning specifically for limiting births was not mentioned by many participants; instead, most women talked about contraceptive use from the perspective of spacing. Permanent methods such as tubal ligation or vasectomy were mentioned by one or two participants as a type of family planning method they were aware of, but not in terms of an option they would consider for limiting pregnancies. None of the respondents mentioned having had a tubal ligation procedure done themselves. Similarly, when participants talked about long-term methods, they were not discussed in the context of limiting children, but rather in terms of longer spacing between pregnancies.

A few participants, particularly in rural areas, mentioned some of the traditional family planning methods that they had heard of being used 'in the villages'. Though these accounts had come from other women in the community, the way in which participants described them seemed to imply sense of certainty in their effectiveness:

Family planning, those local (traditional) ones we hear, you get the umbilical cord and tie it up in a ventilator of the house...once you do that you don't get pregnant. - RW_25-34

There are herbs that you get and place them under a fire stone, and you reach a time when you want to produce, you remove it and immediately you get pregnant. - RW_18-24

There are herbs which you mix with the first menstrual blood, you tie it together, then you hang it up at the front of the door, and once you want to get pregnant, you just remove it and dip it in water. - RW_18-24

Studies on the use of traditional methods of contraception in Uganda have been limited (Kabagenyi et al., 2016; Ntozi & Kabera, 1991); according to the recent 2016 Uganda DHS, only four percent of women of reproductive age in Uganda used a traditional method (including withdrawal and the rhythm method). Nonetheless, as discussed by a few women in these FGDs, traditional methods of contraception, particularly the use of herbs, were still practised in some of the more rural parts of these districts, which could imply a lack of access, availability or awareness of modern contraceptives in these areas. It is important to acknowledge the variable efficacy and reliability of traditional contraceptive methods (Kabagenyi et al., 2016), particularly in settings where these were the only contraceptive option available to women.

The excerpts above highlight some of the complexities of contraceptive method choice, and how this can be influenced by individual factors such as a woman's knowledge and agency to use a particular method, convenience in terms of the accessibility and availability of methods, and method-specific factors such the need for repeat visits to the clinic (for short-term methods) or challenges with insertion/removal (for long-term methods). Women's experiences with contraceptive use varied depending on the factors above as well as their changing situations and needs. Though many of the participants talked about the challenges they faced with family planning, several respondents also acknowledged the personal benefits that contraceptive use had brought to their lives as well as their families' wellbeing.

6.4.2 'Other' contraceptive options

The previous section largely focused on women's own experiences with contraceptives, and their own considerations around their contraceptive method choice. Some respondents also talked about 'other' methods – particularly emergency contraception, and abortion – as contraceptive options in situations involving unprotected sex and unplanned pregnancies, respectively. A common thread weaving through most of their comments, however, was that none of the respondents had personal experience with using these methods themselves; instead, they again described what they had heard from *other* women.

6.4.2.1 Emergency contraception

From discussions about how women handled unprotected sex, particularly with regard to avoiding a pregnancy, knowledge around EC was minimal and in some instances, non-existent. Only a few participants had heard of 'medicines' that health workers could give a woman to avoid a pregnancy, as one respondent described, "Some pills, brown in colour can prevent a pregnancy. I can swallow that and bleed or even if I am in family planning and I have taken long without menstruating, I swallow that and menstruate." Another respondent added, "They also have a drug which they can inject you within 30 minutes of unprotected sex." Once again, the respondents' reliance on other women's accounts or experiences as a source of information came through strongly, and most participants talked about home remedies they had heard of or been told about:

> *I hear that if you have unprotected sex with a man, immediately after sex, squat and squeeze yourself until those things (sperm) get out and a chance may come that you don't get pregnant. - UW_25-34*

Some lie to us that if you have unprotected sex and you don't want to get pregnant, take three tablets of paracetamol (laughs)....but we don't know whether it's true. - RW_25-34

Some people think Coca-Cola soda or hot water plus strong tea leaves can stop the pregnancy. - UW_18-24

It is worth noting that these methods were predominantly mentioned by younger participants. Older participants had no information about to avoid a pregnancy after unprotected sex; most of them stated they had no options in such situations, as this excerpt from the FGD with rural women over 35 years, indicates:

Facilitator: If you have unprotected sex and you do not want to become pregnant, what do you do?

RW_over 35_1: We do not have any knowledge about that…

RW_over 35_2: Let me ask: Is that when you have sex without putting on a condom and you are not on family planning?

Facilitator: Yes

RW_over 35_2: Then there is no way of preventing it… for me I do not have any plan of avoiding it.

RW_over 35_3: We do not know because we would have survived many pregnancies (laughs)

The very limited knowledge about how to handle situations involving unprotected sex may reflect of a lack of education about EC, or a lack of availability of such options as part of family planning services. This is in line with findings from previous work that has looked at knowledge about EC among young people, particularly university students (Byamugisha,

Mirembe, Faxelid, & Gemzell-Danielsson, 2006), who, by comparison, have had more educational opportunities than most of the respondents in this study, and yet had low awareness about EC options. Again, the reliance on information from other women's experiences and accounts is a critical factor to consider in family planning service provision and integrated reproductive health education.

6.4.2.2 Abortions

Some respondents described how other women they knew of had handled situations involving unplanned pregnancies. Where abortion was considered as an option, respondents' views were mixed. Some women considered an abortion as an option if a woman was poor or in poor health, or when a woman had an extramarital pregnancy, highlighted by one respondent's comment: "She may get that pregnancy but out of her family… may be from another man not her husband… so she decides to abort." Others were more fearful of the harms of an abortion itself, and thought it was safer to continue with the pregnancy, as one respondent shared: "If I get an unplanned pregnancy, I just wait until I give birth. Because aborting has two options, either to survive or die, so I just deliver." This sense of fear may also be linked to the fact that if abortions were not carried out by a health worker, the other seemingly riskier alternative for it to be performed by women in the community who used more traditional methods, as indicated in this quote:

> *She runs to a health worker and if he/she has a way, the health worker can save her but if he/she doesn't have, the mother will prepare local herbs to induce abortion. - RW_25-34*

Abortions are illegal in Uganda unless deemed life-threatening to the health of the mother (Moore, Kibombo, & Cats-Baril, 2013; Prada et al., 2016). However, the frequency of unsafe

abortions in the country is alarming, with an estimated 314,300 abortions performed in 2013, and 8% of all maternal deaths being attributed to unsafe abortions in 2010 (Guttmacher Institute, 2017a). Though a few respondents indicated that abortions could be an option to avoid an unintended pregnancy (Kaye, 2006), the safety and availability of trained personnel seemed questionable. While most women did not seem to want an abortion themselves (if they had a choice), they were not completely opposed to the general idea of abortions, nor did they seem overtly judgemental about women who chose to have an abortion. However, many of them were fearful of the risks involved, and the likelihood of serious consequences such as death, that could arise from unsafe abortions.

In summary, despite their fears and hesitancy towards the negative side effects of family planning, most respondents were motivated to continue using a modern contraceptive method. Many of them acknowledged the value of family planning in the benefits it afforded them, and were willing to continue using it in spite of the challenges and inconveniences, which aligns with previous findings in the literature (Kibira et al., 2015). Their different considerations and individual experiences motivating method choice provided important information about method acceptability and availability, as well as factors to be considered when tackling problems of method discontinuation. The demand for long-term methods to be more readily available to women, particularly at more rural clinics where staff may not be trained in administering long-term methods, was also heavily emphasized (Graffy, Capewell, Goodhart, & Rwamatware, 2016; Shumba et al., 2016).

6.5 THEME 4: FAMILY PLANNING SERVICES BOTH FACILITATE AND CONSTRAIN CONTRACEPTIVE USE

Literature identifying the important and influential role that service providers can play in enabling or discouraging women's contraceptive uptake was described in section 2.5.6. At the health system level, other important considerations that influence contraceptive uptake are the availability, accessibility and affordability of contraceptive services provided, as well as the quality of care offered within the provider-client relationship (Bruce, 1990). Taken together, these aspects of family planning service provision greatly impact women's decisions and actions around contraceptive use (Graffy et al., 2016; Mugisha & Reynolds, 2008; Shumba et al., 2016). These issues were explored with respondents in the FGDs, to understand the context of family planning service provision in their setting, and to elicit the enabling factors or barriers they had encountered in the course of their interactions with the health system.

6.5.1 The social distance between providers and women as clients

With regard to respondents' experiences with family planning service provision, many had positive things to say about their interactions with VHTs. As mentioned in section 2.2.1, VHTs form the first tier of the health system and are the primary touchpoint for health services in communities. Among other basic health services, VHTs offer family planning counselling and in some instances, are trained to provide short-term family planning methods via the CBD model (Stanback et al., 2010). Some of the points that respondents raised were that VHTs were physically closer to them in their communities and therefore easier and faster to access, their services were free, and they could be trusted, especially when women were using contraceptives covertly. Since VHTs were fellow community members or neighbours, women seemed to have formed closer confidential relationships with them and therefore valued their advice, as evident in this quote:

I prefer getting family planning from the VHTs because they are near to us and even if you want to do it secretly, they can keep your family planning card and keep reminding you. - RW_18-24

A few participants remarked about the limited scope of VHTs in some of their communities, where VHTs were unable to provide women with contraceptive methods such as the injectable (due to a lack of training) but instead referred them to the nearest hospital. Women sometimes had to pay for the services they then received, which became an additional financial constraint:

They [VHTs] *usually move village to village and teach us about family planning but they don't give us tablets (pills) but refer us to Iganga main hospital. It is only condoms that they give... but pills, injections and IUDs they refer us to the hospital. - UW_over 35*

...VHTs are good and we are happy with them and they advise us and give us their opinion and they refer us to certain hospitals but those hospitals ask for money from us. - UW_25-34

A few younger participants also mentioned VHTs being key influencers in their decision to use contraception. Service providers were therefore a trusted source of reproductive health information and advice for younger clients. This was particularly pertinent in situations where these women did not feel comfortable or able to trust others in their community, or did not know enough about family planning themselves.

With regard to service providers, respondents seemed to make a distinction between VHTs and HCWs; they referred to the latter group as personnel working specifically at health centres and private clinics. In addition to clarifying their different roles in the health system, respondents had mixed reviews about the quality of services provided by HCWs. A few were happy with their services, as evident from this quote:

Health workers don't have any problem concerning family planning and they inject you immediately you demand for it… and they can even leave other patients and attend to a family planning client. - RW_25-34

Several others, however complained about the way HCWs treated them. Some of participants' concerns were that HCWs did not follow the client's wishes in terms of method choice, and they sometimes lacked the knowledge and skills for comprehensive service provision:

For me I just decided on my own and I told the health worker to inject me and I don't talk anything more with her […] *because those health workers don't know certain things. So for me I just check for the expiry date and I know most of the family planning methods so I decide on my own. - UW_25-34*

A few participants complained that HCWs sought money from clients, when services were meant to be free (in public facilities). One respondent remarked: "The reason why most health workers want an IUD is that we are going to give them money and I wonder nowadays why there are no injections and pills!". Respondents also cited a few examples where the choice of contraceptive method was made by the provider and not by the women themselves:

For me, I went to Iganga Islamic Health Facility for family planning and I said that I want an injection and then the health worker told me to use an IUD and I said I don't want it because people say it gets absorbed in the body... the problem the health workers have, they want to decide for you. - UW_25-34

> *Health workers, maybe those who work in family planning units, they don't follow our requests but want us to follow their orders… for example, I went for an injection when I was breastfeeding my baby but when I got there, they told me to use pills, yet pills give me a hard time to swallow. - UW_25-34*

The quotes above imply that the counselling process, which is an integral part of family planning service provision, was often a one-way dialogue with health personnel dictating to women which method to use, rather than a discussion between the provider and client. A few respondents also felt that HCWs were dismissive or discriminatory towards family planning clients, and did not spend as much time with them as they did with HIV clients:

> *The health workers do not handle us well but they handle HIV/AIDS patients well. I don't see the difference between the HIV clients and the family planning clients so they should start handling us well just like the HIV clients… because by the time you go to the health facility to get a certain service, then you need it and they should provide it to you… In Iganga main hospital they will tell you this* [method] *is not around, and you go and buy it and they will bark at us, so you decide to leave and go to a* [private] *clinic for that service… if you don't have money, you give up and come back home and you get pregnant. - UW_25-34*

In many instances, women's individual needs, preferences and concerns did not seem to be factored into the contraceptive counselling process. The way women were treated by healthcare providers differed across different providers and clinics, but in several cases did not meet women's expectations of satisfactory family planning counselling. The ways in which these women then exercised their own agency varied, but the quotes above highlight broader, critical

issues of poor communication in the provider-client interaction and client dissatisfaction with the service provision process.

Some women mentioned a lack of confidentiality when dealing with HCWs, particularly around covert contraceptive use, which seemed to speak to a greater trust issue in terms of the provider-client relationship with HCWs. Perceived trust issues with service providers have been reported as an obstacle to seeking out contraceptive services, particularly when providers are part of the same community (Nalwadda et al., 2010), as the quote below elaborates:

> *… some workers in those clinics don't keep secrets yet you may not want that information to reach your husband... and as you know woman in spreading gossip, it may reach your husband and you get trouble. - UW_25-34*

Some participants also raised concerns about a belief that their blood type needed to be tested before they were provided with contraceptives, and that some service providers did not do this. This misconception, previously reported in other contexts (Rutenberg & Watkins, 1997; Willcox et al., 2019), seemed to be widely-held and strongly linked with poor service provision and the eventual experience of negative side effects. As the quotes below indicate, a sense of frustration with the services was apparent when their blood was not tested. Many women felt this could be avoided if healthcare personnel provided this service as part of their routine family planning counselling:

> *I understand there is a woman who went for family planning without testing her blood but she just collapsed and she was like a dead body and could not even lift a cup to take a drink and we told her never to use family planning again before testing her and now she stopped using it. - RW_over 35*

For me, I thought that as they used to advertise on radios that you go and they test your blood and know which method matches, I thought it was what I was going to see. The experience was different. I was just injected without testing blood. - RW_over 35

Though blood tests are not commonly part of routine family planning counselling, the continued existence of this misconception among women may also reflect providers' lack of efforts in dispelling such beliefs during routine family planning counselling. The language and terms used by providers in communicating with clients may also be a source of misunderstanding or confusion, particularly if women do not understand or misconstrue providers' advice and instructions. In the above instance, it could be that providers recommended blood tests for routine HIV screening, which women have then associated as being part of family planning counselling.

From the excerpts above, women were overall more comfortable in their interactions with VHTs, who were considered closer to them as fellow community members, compared with HCWs who were seen to belong to the health system and therefore occupied a more formal role in the provider-client relationship. Given the limited scope of VHTs in family planning service provision however, these women still needed to continue their interactions with HCWs at clinics and health centres if and when they needed contraception, though this was not their preferred option. In a discussion on how intersectionality and complexity theory can expound the social determinants of women's health, McGibbon & McPherson (2011, p. 65) posit that inequalities in healthcare provision can 'oppress' women when they seek out health services. Social hierarchies between providers and clients, and systemic inequities within the health system can further affect women's options and experiences in healthcare access and uptake. The sub-optimal relationships with HCWs highlighted above could thus pose a further barrier to women's contraceptive uptake and/or continuation with a particular contraceptive method.

6.5.2 Women's encounters with different health system limitations

At the health-system level, one of the main constraints that respondents talked about was the lack of availability, or 'stock-outs' of certain contraceptive methods, particularly popular methods like the injectable. While some respondents said they were able to circumvent this by going to another clinic if this was near enough to them, many others did not have alternative options available to them, as one respondent shared:

> *You may go to the health facility for family planning, say an injection and you find that the drugs are out of stock. They tell you to go back another day. That puts you on tension because you get scared of getting pregnant that night. - RW_18-24*

Other women said that they switched from short-term to long-term methods in order to avoid the frequent unavailability of short-term methods at the health facilities, as stated by one participant: "If am using a three month method, and you go when the drugs are out of stock, I go in for the two years method instead." As highlighted in section 2.5.6, contraceptive stock-outs are a common occurrence in many of the more rural areas of Uganda (Grindlay et al., 2016; Kipp & Flaherty, 2003b; Sileo et al., 2015). This is often disruptive to women's consistent use of contraceptive methods, particularly for methods such as the pill or injectable that require revisits to the clinic for new doses every one to three months. As a result of limited availability, women often had to deal with negative side effects from inconsistent method use, or switch or discontinue their chosen contraceptive methods, which then served as a further obstacle to future contraceptive uptake.

Another constraint that some respondents mentioned, particularly in rural settings, was the long distances and significant transport costs to get to the nearest health facility. These compounded their challenge of returning to the clinic every one to three months to get their contraceptives.

The cumulative costs of the contraceptives were also an issue if women were accessing these at private clinics:

> *The cost spent going for an injections after every three months… I think I would be saving because instead of after every three months paying 3,000/= I will pay once for three years. - UW_25-34*

Given that the largest proportion of Uganda's population live in rural areas (83.5% in 2016) (Uganda Bureau of Statistics, 2018), this is a particular concern in term of access to reproductive health services for a majority of women (Ouma et al., 2015), as one respondent explained:

> *Health facilities being very far from us… that can limit us. The whole parish does not have a government health facility. The nearby facility here is Budane health facility. It is far, a good distance from here. - RW_25-34*

These sentiments are consistent with previous work that has found ease of access and lower costs to significantly influence women's contraceptive method choices (Hyttel et al., 2012; Tibaijuka et al., 2017). From the quote below, the challenge of repeat visits to the clinic were also particularly cumbersome when participants were using contraceptives covertly:

> *Since I may be doing it secretly and at every end of three months you have to find a way of getting injected, so I decide to go for a long-term method where I wait for five years. - RW_25-34*

The variability in service provision, both in terms of the quality of services provided as well as the skills of the providers, was another topic that was repeatedly raised in the discussions. This was particularly in relation to a lack of trained, skilled providers for the provision of long-term methods, counselling about side effects and subsequent side effect management. Insufficient

training of service providers and personnel being overworked has previously been reported as a challenge in family planning service provision (Hyttel et al., 2012; Krueger et al., 2011) particularly for long-term methods that require technical skills for insertion, such as the implant or IUD (Mugisha & Reynolds, 2008; Pitorak et al., 2014). Poor staffing of clinics further compound this issue due to long waiting times and family service provision being limited to a few hours or days during the week (Nalwadda et al., 2010).

6.6 SUMMARY AND CONCLUSIONS

The four preceding themes highlight a multitude of enablers, barriers and key considerations that influence women's use of contraception. Within the framework of the socio-ecological model (described in section 3.4), it is discernible that these factors operate at different levels (individual, familial, societal, health system) but are also directly and indirectly linked across these levels. For instance, a woman's individual beliefs about contraception can be directly influenced by the beliefs of her wider community; and a woman's autonomy within her relationship could directly impact her ability to interact with the health system. While many of the respondents recognised and valued contraceptive use for the benefits they had experienced, many others highlighted the challenges that still existed with being able to access and use contraception. These included fears about the harms of contraceptives; poor management of contraceptive side effects; gender and socio-cultural norms that dictated a woman's ability to make choices regarding her reproductive health; partner opposition to contraceptive use; difficulties in accessing contraception due to unavailability, costs or distance; unsatisfactory interactions with family planning service providers; and a lack of contraceptive options and trained staff at the health system level. Despite these fears and challenges, however, many women resolutely sought out contraceptives in order to manage the size of their family and

handle the responsibilities and roles they had as women in a family and society. This was sometimes done at the risk of severe consequences on the part of their partners, if they were discovered using contraception covertly.

7 QUALITATIVE PHASE 2: INTERVIEWS WITH MEN

7.1 INTRODUCTION

Male involvement in contraceptive discussions, decisions and uptake has been established as a critical factor to effective family planning programs (Ghanotakis et al., 2016; Stern et al., 2015). Given that men are customarily regarded as the main decision-makers and head of the household in Ugandan society, partner opposition to family planning is a significant barrier to women's contraceptive use (Kabagenyi et al., 2016; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). Reasons for opposition cited in the women's FGDs and previous research include stigma around contraceptive use, a preference for large families and a fear of negative contraceptive side effects (Dougherty et al., 2018; Kabagenyi, Jennings, et al., 2014; Kaida et al., 2005).

The main objectives of the men's interviews were to understand their knowledge of, attitudes towards and experiences with contraception, and how they viewed their role in family planning. A total of 24 men (12 urban, 12 rural) were interviewed. Details of the methods employed have been described in section 3.6.1.2, and interviewees were each assigned a pseudonym before their interviews. A summary of interview participants' data can be found in Appendix J.

A thematic analysis identified five major themes across the men's interviews (Figure 7.1). These themes describe how men's identities and status were tied to family size (Theme 1); men's roles in family and society, and how these were changing in light of economic considerations (Theme 2); how contraceptive use fit in with managing the needs of one's family (Theme 3); the ways in which contraceptive knowledge was acquired in one's community (Theme 4); and reasons for men's minimal involvement in family planning (Theme 5). The chapter starts by exploring how men understand family planning, providing a contextual backdrop to situate the subsequent thematic discussion.

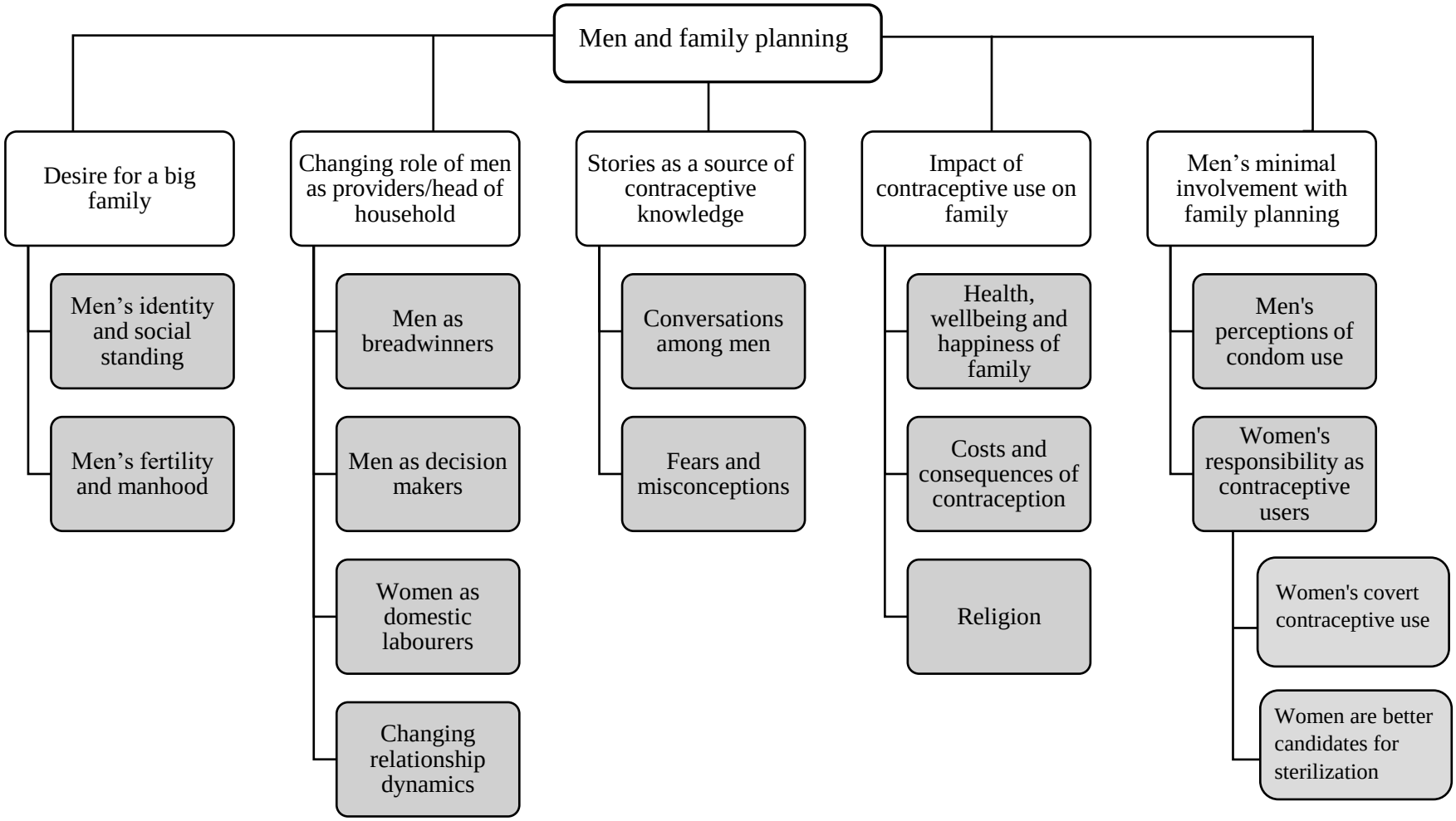

Figure 7.1 Thematic map from men's interviews

7.1.1 Men's definitions of family planning

When respondents (both users and non-users of contraceptives) talked about their knowledge around family planning, most men mentioned the word *spacing*; in Jonathan's words, "Family planning is planning for your family, spacing of child births and having a number of children you can care for." The quotes below indicate that respondents recognised the burden of closely-spaced pregnancies on women, and described family planning as enabling them to avoid unwanted pregnancies:

> *Family planning has an important role to us, it saves us from producing like rabbits, like if one has a crawling baby and she is again pregnant… so family planning helps us in that way.* - Samuel, FP user, rural

> *According to me, family planning is the way for one to control, or keep him or herself against pregnancy, like ladies prevent themselves from pregnancy. Then another [reason] is it just helps in spacing of children.*
> - Steven, FP non-user, urban

In general, almost all respondents had some level of awareness and knowledge about the purposes of contraception. There was no overt difference between contraceptive users and non-users in the way family planning was defined, but it was noteworthy that very few of the men (Samuel's views above being an example) talked about family planning directly in terms of limiting the number of children in the family.

Interestingly, Bwanbale talked at length about the distinction between family planning and family spacing. He felt an important difference between the two terms was often missed or lost, because they were used interchangeably:

> *With family planning, it's been defined but not properly, because when you talk of family planning, we understand it in different ways* […] *Family spacing and family planning, those words, they have different meanings, deeper, if you were to interrelate them* […] *according to my understanding, family planning would have been good in its explanation that you have to plan according to the number of the people and the resources you have […] But they confuse it with family spacing. Because somebody may space children, when he has everything, but a need for spacing can also interfere with family planning.* - Bwanbale, FP non-user, rural

His comments highlight the understanding that family planning not only includes spacing, but that the number of children in a family should be planned for so that the resources of a family were sufficient to ensure proper care and wellbeing for all its members. Additionally, his last comment seemed to imply that spacing could get in the way of having 'enough' children, in reference to an ideal family size. This concept will be revisited in the themes and sub-themes that follow.

7.2 THEME 1: A 'BIG' MAN HAS A BIG FAMILY

In his chapter titled 'Masculinities' in *A Companion to African History*, Miescher describes the concept of the 'big man' in African society; a man who was seen to be wealthy, powerful and occupying a high social status as a result of his many wives, large families, riches and slaves (Worger, Ambler, & Achebe, 2019, pp. 35-52). Though ideologies have since evolved amidst changing economic, colonial and post-colonial influences, male identity and masculinity are still very much linked to the size of one's family in many African societies (Therborn, 2006).

As described in section 2.5.1, the extended family can also have considerable influence over men and women's decisions about ideal family size, and their expected roles and responsibilities within their nuclear and extended families.

A large nuclear family is often established through the practice of polygyny and co-wives bearing as many children as a man desired (Chojnacka, 1980; Onyango, Owoko, & Oguttu, 2010). The following sub-themes spoke to how a man's identity and status in society were linked to the size of his family. Woven into these excerpts were remarks about the familial expectations of women and men in Ugandan society, and how fulfilling these expectations reaffirmed one's status in the community, particularly for men.

7.2.1 Family as a determinant of men's identity and social status

Historically and traditionally in the patriarchal, patrilineal context of Uganda, a larger family has indicated a man's higher social standing and status within his extended family and community (Kabagenyi, Jennings, et al., 2014; Kabagenyi et al., 2016). Men's preference for large families and the practice of polygyny are direct consequences of these socio-cultural norms, and continue to be an inherent barrier to contraceptive use among women and men in Uganda (Ouma et al., 2015), a point also raised in the women's FGDs. Therefore it was not surprising that many respondents cited a desire for more children as their major reason for contraceptive non-use.

A few contraceptive users explained what a large family signified for Ugandan men, and why this belief persisted in some communities, despite changing economic considerations and lifestyles. Socio-cultural norms and the collective values of the community often emphasised large families provided a sense of social status:

> *They fear* [family planning]*! There is a fear that that is a cause, it's a trouble to their life…so they go on producing. Remember they have the other interest of our grandparents, that more children, more power. More wives, more power. But forgetting that the way of recent life is not of this life. So these children were married at an early age, and produce children. They'll not be educated, and for them also, at a very early age, they produce. So the total number goes on like that.* - Henry, FP user, urban

Henry's quote also emphasized the continuation of a cycle of unquestioned traditions and practices. Though living conditions and financial resources of families had changed over time, he opined that these changes had not impacted the more traditional community beliefs and opinions about the size of their family, and many people remained unaware of or uninterested in family planning. Musa had a different opinion; which acknowledging the socio-cultural norms and social status that favoured large families, he also believed that the size of a family represented a sense of security to some in the community:

> *Now, when we look at our culture, having a big number of children is the pride of somebody. Because when you have a big number* […] *it is a source of security for the father and the mother. In our culture, we say that if you produce many, they can build around your home. In case of thieves, in case of any other problem, they can help you very fast… They don't want even to listen about family planning, because they think producing many will provide security for them. You can even find somebody producing 12, 13* [children] *and so on.* - Musa, FP user, rural

Some respondents acknowledged that a lack of education played a part in the continuity of more traditional mindsets about large families. A clear difference in perceptions of status was evident, particularly among respondents who were contraceptive users. They described 'people in the village' who did not use family planning as being more illiterate, uneducated and unaware of the benefits of contraceptive use. These respondents also had different ideas about their own identity, and saw themselves as examples of educated men who recognised the benefits of family planning in enabling them to have smaller families:

> *Being an educated person, I think family planning is good, so I don't have any reasons why I would hesitate to use it.* - Samuel, FP user, rural

> *For me, being an educated person, I see that* [having a large family] *as not a solution, because I must have a number of children who I can manage. But in those families, you find that most of the children they have produced, they cannot even help themselves. In the long run, it is the father again to help the children, instead of the children helping the father or the mother!* - Akiki, FP user, rural

Given Uganda's predominantly agrarian economy, there is a heavy reliance on subsistence farming for many families' primary source of food and income. Having a larger family in this context translates into more labour to generate income, particularly in rural regions (Garner & de la O Campos, 2014). Though there has been a shift to relatively smaller families over the last few decades as a consequence of urbanization and the rising cost of living (Lutalo et al., 2010), in many of the more rural areas, large families remain a tradition (Ouma et al., 2015). Akiki's comments are thought-provoking from the economic standpoint that having many children was to increase the family income by having them work; instead, the situation he described added a further burden to the parents when the children did not fulfil their

expected roles and were too many to support. The consequences of this, as some participants explained, was that the health, education and wellbeing of the family as a whole suffered. This also follows findings by Lachaud et al. (2014) in Burkina Faso, where children from smaller families were more likely to be enrolled in school or attain post-primary school level irrespective of their age and gender, compared to children from larger families. The above quotes indicate that education may be key to driving a preference for smaller families in the future.

7.2.2 Losing one's 'manhood': You're not a man if you can't sow your oats

Following the sub-theme that a man's family establishes his identity and standing in society, I turn to the significance placed on men's fertility in determining their masculinity and social status. The importance of one's 'manhood' came through most clearly in respondents' comments on vasectomy. Almost all respondents were opposed to the idea of vasectomy as a contraceptive option for themselves, articulated strongly in a quote from Musa, a contraceptive user: "My friend, I want children and you are talking about vasectomy! No!".

Given the significance that masculinity holds in the patriarchal context of Ugandan society, vasectomy is seen as the effective loss of one's manhood (Kabagenyi, Jennings, et al., 2014), and was therefore not even considered as a viable contraceptive option by most respondents. As demonstrated in the quotes below, the main reason for this was the permanence and irreversibility of the procedure which effectively took away men's option to have more children in the future, either with their current wife or a future partner:

> *I have five children now but I may get another woman who may wish to get a child so I can't allow* [a vasectomy]. - Sanyu, FP user, rural

Vasectomy... it is ok but I don't think many men can embrace it […] *Because vasectomy, it's like you're not going to give birth until you die! You understand? The moment I know that, that one I'll just leave, like running away.* - Jairus, FP non-user, urban

A few men, however, did concede to the possibility of a vasectomy when they were much older and did not want any more children:

It has advantages and disadvantages according to someone, so like me I can put it at 60 years, not now in my 30s. - Achen, FP user, urban

… like there is a man who went for vasectomy with one child and that child died and the man died without any child so vasectomy is good if you have like four to six children. - Ivan, FP non-user, rural

It might be good, but it depends on how far you are standing. Some men may be in need of producing more children, but for example when you have one child, or two, I don't think you can get very many men to accept vasectomy. - Bwanbale, FP non-user, rural

The quotes from Ivan and Bwanbale again emphasise the cultural and societal implications of a man not having 'enough' children. Though infant and child mortality rates have decreased in Uganda over the last decades (Uganda Bureau of Statistics, 2018), the fear of child mortality or replacing children who have died in the past has often been a motivator for large families, particularly in times and regions of conflict (Urdal & Che, 2013). Ivan's quote also implied that a man dying without having children meant his legacy was lost, which has important implications for family wealth distribution and inheritances in Uganda's patrilineal context. The quotes above were reflective of the majority of participants' views about vasectomy, and

are consistent in the context of SSA, where the prevalence of vasectomies has been estimated at <0.1% (Jacobstein, 2015).

This theme highlights the significance of family size and fertility of a man in determining his masculinity, identity and social status in his community. Family planning was a barrier to achieving larger families and proving a man's virility, hence many men were opposed to contraceptive use on their part or by their partner. Though there was a strong preference for large families, education and economic hardship were acknowledged as important factors in potentially changing men's more traditional mindsets. However, opposition to family planning among other men, particularly in rural areas, was shaped by their desire for larger families.

7.3 THEME 2: THE CHANGING ROLES OF MEN AS PROVIDERS: HEADS OR 'FIGUREHEADS' OF THE HOUSEHOLD?

Patriarchal gender norms in Ugandan society typically situate men as the head of the household. However, the status of a patriarch also imposes certain roles and responsibilities on men and, as a consequence, on women (Silberschmidt, 2005). Due to changing demographic and economic considerations, some of these roles and responsibilities have changed in recent times. The following subthemes discuss men's perceptions about gendered roles and expectations, and their implications for family size and contraceptive use.

7.3.1 Men as breadwinners

Most respondents were of the view that men (and women) played very distinct, almost complementary roles in the context of raising and managing a family. Men saw themselves as breadwinners, tasked with the financial support of the family; this included ensuring the education and healthcare needs of their partner and children were taken care of. Tasks related

to the ‘development’ of the family were mostly handled by men with particular emphasis on the wellbeing of children:

> *The duties of a man is actually to take control of his family. For example having basic needs for the family, like clothing, housing, education for his children, and even food, looking for food for the family.* - Joseph, FP user, urban

> *When it comes to the economy, a man, you must be well standing. For example concerning health, buying medicines, paying school fees and other additional development activities in our homes and families.* - Ochieng, FP non-user, rural

The expectation of men having to support their family was made more evident from a remark Bwanbale made, when he said “My interest is after money, I want to look for money. A man’s first priority.” Men successfully fulfilling their role as a breadwinner and having a large, healthy and well-looked after family awarded them a level of status in their communities. However, the stress that men felt as a consequence of this role also came through in their comments about the benefits of family planning in terms of managing the financial pressures that came with a large family. This was aptly highlighted in quotes from Achen and Benjamin about their personal experiences of the financial benefits of family planning:

> *… that is why I decided to use those condoms, because for me, if there was no family planning, maybe I won’t be reducing my kids. And these days, the world, the country is not good, poverty, education... you can’t afford the kids now, when you have many children in Uganda. For them to go to school, to get food, it is not easy. Everything is very expensive for us.* - Achen, FP user, urban

> *We get involved in family planning because of our responsibilities we have; getting food, educating children may over burden you yet you still love your partner and so you decide to adopt family planning... because of the low standard of living*. - Benjamin, FP user, urban

Though a contraceptive non-user at the time, Joshua touched on the benefits of better managing his family's financial resources:

> *Benefits... there are many but the major one is resource allocation. In terms of economics, resource management. If you have the number of children you can manage, it helps you to save for the ones you have, and resources may be enough for you.* - Joshua, FP non-user, urban

From previous studies, one of the main and most common motives for men's use of family planning has been around financial management of their families (Shattuck et al., 2011; Sileo et al., 2017). Many of the respondents in this study were acutely aware of the rising costs of living, and had personally experienced the monetary challenges of caring for and supporting a large family, particularly in terms of costs for food, education and healthcare. Joshua's quote above reflected the opinion of some men that having fewer children enabled a better life for those children as a result, contrary to more traditional views that more children in a family was better (Kabagenyi et al., 2016).

7.3.2 Men as the primary decision-maker and authority in a marriage

When it came to the decision-making process around contraceptive use, both about whether to use a method and which method to use, a man's decision took precedence. Robert, a contraceptive user, remarked, 'I use a condom and she is not engaged', possibly indicating the

perspective that women were passive acceptors men's decisions and unquestioningly did what their partners wanted them to do, rather than active participants in the contraceptive decision-making process. The quotes below from other respondents provide more examples of this:

> *I brought her* [to the clinic] *and she was injected with a family planning vaccine*. - Akiki, FP user, rural

> *It is me* [who initiated the discussion about family planning] *because it was on a radio and I told them and we went for it* […] *They are my wives, I am the one who brought the idea so they wouldn't refuse.* - Jonathan, FP user, urban

Joseph, a contraceptive user, remarked 'If she has narrated to me, I am free with it', reflecting a few of the men's views that they were fine with their partners initiating contraceptive use themselves, as long as the men were informed about it. However other respondents, particularly contraceptive non-users, appeared suspicious or felt that their authority had been questioned if their partner initiated a discussion on contraceptive use:

> [if she initiates a discussion on family planning] *for me I will think she wants my money…but if* [I] *initiate it and she agrees, I don't have any problem with it, I trust her* (laughs). - Francis, FP non-user, urban

> *If my wife uses family planning, I want her to do what I want; first I want her to produce many children*. - Joshua, FP non-user, urban

> [if she initiates a discussion on family planning] *I send her away and she goes back to her parents' home.* - Timothy, FP non-user, rural

These quotes illustrate the gendered expectation that a man's opinions and fertility preferences superseded a woman's. Timothy's quote also described the implications and potential punitive

measures faced by women if they initiated a discussion about contraception. Inherent in the way respondents phrased these remarks was the intimation that as men, they were dealing with a sense of defiance and disrespect, particularly as they were contraceptive non-users. These comments provide insights into the expectations and status of women in a relationship when it came to respecting men as the final decision-making authority.

Many respondents were also overtly opposed to their idea of their wife asking them to use a condom. In the quotes below, their phrasing of sentiments around this idea hinted at an underlying assertion that their opinion on the matter, as men, was final:

> *I said I don't want it* [a condom]. *Is she going to sleep with the condom or the person?* - Steven, FP non-user, urban

> *A woman you brought home can't use condoms because it's family planning which I don't want.* - Timothy, FP non-user, rural

These quotes also highlighted the expectation that women as partners were to comply with what men wanted, which spoke to the power structures and gender norms within relationships. Timothy's comment in reference to 'a woman you brought home' may also be linked to the practice of paying a bride price for a woman at marriage described in section 2.5.1, which in many instances has been reported to give men a sense of ownership over a woman as he (or his family) *paid* for her (Kaye, Mirembe, Ekstrom, Kyomuhendo, & Johansson, 2005). Men's opposition to condom use may also be due to the association of condoms with extra-marital affairs or with casual sex partners, which is explored further in section 7.6.2.1. If requested by their wives, this could, by the same logic, imply that their wives had other sexual partners; this may be further compounded by the fact that condom use is commonly associated with protection against STIs/ HIV infection.

7.3.3 Women as domestic labourers and child-bearers

The roles of women as wives, mothers and sexual partners, and how these inextricably contributed towards a man's standing in his community, were also discussed. Men's perceptions of women's roles in a family were largely around responsibility for domestic activities:

> *African women, according to the culture* […] *traditionally, they have not been empowered to access income, so within that area, a man is more capable of filling that gap. The domestic work, the ladies, they are the most hard-working… Food collection, water, domestic work, and so on.* -– Ochieng, FP non-user, rural

> *For women, actually it is cooking,* [she] *even takes a little responsibility like some women can educate their children, farming... yeah those... mainly home work.* - Moses, FP user, urban

From the comments above, women were identified as the domestic labourers of the family with obligations that were acknowledged as numerous and physically demanding, but were not held in the same regard as men's roles. For example, women brought in food for the family through farming, but men's monetary contribution through external work and the use of this money for food was held in higher regard. Likewise, in recognising that women were 'the most hard working', a greater proportion of manual labour seemed to be expected of women (farming, food and water collection, cooking, washing, etc.). Once again this could reflect power dynamics and differences in status, where women are seen as being subordinate to men within a relationship and in society.

Some respondents acknowledged that women have also had to contribute to the household economy in more recent times, due to the increased cost of living in Uganda. The quote below

from Jairus describes women's already large raft of family duties expanding due to the failure of men to fully meet their obligations as the main breadwinner in the family:

> *Ok, for the man, in our culture, first of all is to provide protection. Like security for the family, basic needs like clothing, food, school fees for the children. Then for the mother, also some parts of those. She has to provide for the security, food, care. That* [financial role] *is the role of the men. For ladies, it's not. Nowadays it keeps changing, but basically it is to be home, to prepare food, that is their major role. The house life. But the trend is changing nowadays, because things are not good. Nowadays, men, women also, they're both working, such that also they can provide some school fees. Because the husbands, they're not responsible enough. Nowadays, ladies also are coming in to work hard so they can get food.* - Jairus, FP non-user, urban

While acknowledging the multiple responsibilities that women were tasked with, compared with the fewer roles men had, men still considered the financial support of a family to be more difficult. This was despite women having to step in and assist men with this role in some situations. Ochieng summed this up as saying: "Women have to keep the home, wash clothes, cooking, going to the garden to get food… then us men we struggle hard to sustain the family." This indicates gendered expectations and a lack of recognition for the hardships of unpaid care work domestic labour that women tended to be burdened with (Guloba et al., 2018).

Where reproduction was concerned, a woman's role in 'producing' (the word commonly used for childbearing in Uganda) was strongly emphasised; as Steven remarked, "the role of women is to deliver and men to impregnate those women." The responsibility of parenting, childcare and at times the education of children were conferred almost solely on women; as Benjamin

explained: “a woman has to deliver children, provide care to those children, and cook food so that they grow up in a happy life.” These tasks tied women to the home, which again reflects the socio-cultural and gendered expectation that women’s main roles were largely in the domestic and child-rearing space. The restriction of women’s mobility reinforced women’s subordinate status, as they were less ‘free’ to do as they please, and were instead bound by their partner’s directives.

Gendered roles also came through clearly when Adrian said, “Once a woman is in a home, she has to care for her children, cook food and in case of any mistake, she has to tell me… that is her responsibility.” His comments alluded to a hierarchical power structure within marriages that situate a woman as answerable to her husband. Thus, traditional gender roles in a family seem to continue for many women and men in the above contexts, and shed further light on the day-to-day barriers women face accessing contraceptives.

7.3.4 Provider or progressive? Changing relationship dynamics in changing times

A few past studies have reported shifting perceptions towards gender equality and roles in relationships. For example, a study by Withers et al. (2015) in Kenya highlight the changing roles of women, particularly with regard to labour force participation, as providing a platform for more open discussion and changing attitudes towards gendered norms and expectations. Other studies have highlighted such changes as being the result of gender-transformative programs targeted at men and boys, aimed at questioning existing, harmful norms in light of gender equity within relationships (Barker, Ricardo, Nascimento, Olukoya, & Santos, 2010; Doyle, Kato-Wallace, Kazimbaya, & Barker, 2014; Doyle et al., 2018; Dworkin, Hatcher, Colvin, & Peacock, 2013; Stern et al., 2015; Wegs et al., 2016). In a review of gender-integrated interventions targeted at improving reproductive, maternal and child health, Kraft et

al. (2014) report short-term changes in knowledge and attitudes around gender equality, but a lack of clarity and certainty around longer-term behavioural outcomes. Among the men interviewed in this study, a minority of respondents had more progressive, liberal views about gender expectations and roles in a relationship, across both urban and rural districts. A few respondents talked about the importance of joint discussion between the spouses as central to family planning decision-making. In the quotes below, these men emphasised the aspect of deciding 'together' and stressed the need for agreement between them and their partner:

> *I sat with my wife and discussed and agreed and we made it* [the decision]. *We both felt good, happy because we agreed together*. - Robert, FP user, rural

> *Actually we watched on TV families that had done family planning and we liked them, and when I told my partner, she was free with it and she bought the idea because family planning issues needs you to sit down with your partner and agree.* - Kaikara, FP user, urban

It is important to note that the quotes above are from contraceptive users, who may already be more open to discussions about contraception within their marriage. These men acknowledged the importance of women's views and considered their partners' opinions on contraceptive use. Their comments suggest that these conversations arose organically, rather than from one partner approaching the other with an agenda. This was in contrast to how women in the FGDs described their discussions about contraceptive use with their partners, and could reflect a difference in expectations and experiences with the contraceptive decision-making process among women and men.

Two respondents further elaborated that discussing and sometimes convincing a partner about contraceptive use seemed to be an expectation for married couples, pertaining to a sense of trust within a relationship:

> *I can bring an idea and my partner rejects or a wife brings and the man rejects but as married people, you sit and agree because one can refuse because they are ignorant but when I explained, she allowed*. - Benjamin, FP user, urban

> *Family planning issues have to be a two person agreement because without that, one can't trust you.* - Francis, FP non-user, urban

The following respondents also had differing views on how they felt about their partners initiating a discussion about family planning. From the quotes below, they were open to the idea and acknowledged the benefits of family planning:

> *I feel okay* [if she discusses family planning] *because I think she is enlightening me about our future*. - Sanyu, FP user, rural

> *She would be right according to the standards of living because some of us live in houses without anything* […] *so it would be good.* - Adrian, FP non-user, rural

Anthony shared another uncommon perspective that a man's role should expand beyond just financial support to assisting his partner in caring for the family, particularly if they had many children:

> *Men should help their women, looking for money to care for the family and helping the woman to dig, caring for children and escorting her to the hospital because you may have three children of six years, three years and a baby, so you escort her*. - Anthony, FP non-user, rural

His views seemed to speak to enabling the empowerment of women, in terms of removing barriers to access of care such as distance, costs, challenges around transport and having to seek permission. As Asalou et al. (2018) point out in their paper on women's empowerment in SSA, the ability to access healthcare is a significant measure of women's empowerment. In the quote above, Anthony's stance was to support his partner in being able to access healthcare when she needed, particularly given the multiple tasks she had to juggle in terms of child care and engaging in manual labour to support the family economically.

It was unclear if there was a commonality among these men that resulted in less traditional views. Though many of these respondents still considered a man to be the head of the household and the primary decision-maker in a family, they were more open to women being involved in discussions around family planning, and recognised women as having a voice. A study by Wyrod (2008) around how the women's rights movement in Uganda has shifted men's ideas about masculinity and gender roles identified a similar subgroup of men, who still held onto the notion of 'innate male authority' but who also recognised the value of women's roles in the family and society.

In summary, this theme describes how a man's identity and status in Ugandan society are closely linked with their family's size and the roles women and men play within the family. The use of contraception helped manage the tension between the socio-cultural norm of having large families, and men still being able to adequately fulfil their roles as a breadwinner. Women's roles, while integral to managing a family and contributing to a man's social

standing, were less recognised in terms of hardship and status. Nevertheless, slow yet significant changes in traditional and patriarchal mind sets among men may alter the expectations around gendered norms and roles in relationships in the future.

7.4 THEME 3: THE IMPORTANCE OF 'FAMILY' IN FAMILY PLANNING

In exploring the reasons for men's acceptance or opposition to family planning, the underlying theme of the wellbeing of one's family came through in most respondents' comments. The family unit was a key influence on men's attitudes towards contraception. The sub-themes in this section explore this is more detail and are mainly centred on the health and happiness of men's families; the costs and consequences that resulted from contraceptive use; and the peripheral influence of religion.

7.4.1 A healthy, well-spaced family is a happy family

In recognising the burden of several pregnancies on women, some respondents acknowledged the improved health and wellbeing of their partner as a positive outcome of contraceptive use. They described the benefits of women being able to recover between pregnancies, and having more energy, time and capacity to care for their children:

> *…family planning is very important because it helps the mother to rest between pregnancies. And the family becomes so healthy because they can get enough from us men to support. It's easier for us men to support the family because the number of children in the family is low.* - Moses, FP user, urban

> [Reasons for using family planning] *One, was to reduce the number of children that I would have. Two, was to reduce the labour of my wife. Because when somebody is pregnant, she becomes more stressed. Secondly, she can even grow older very fast. But if she can spend something like four years, five years without being pregnant, she grows younger than somebody who is producing each and every year.* - Isaac, FP user, rural

Mukasa talked about the general health benefits that women gained through contraceptive use. He related this to women being responsible for their own lives and wellbeing when they opted to use contraception:

> *It's a good thing for the women to use family planning because it helps them, even for their health, because for example I usually see them in the village, someone can conceive after six months, or even before six months, so it has health implications. So if you use family planning, it helps you, your health.* - Mukasa, FP non-user, urban

Some participants also talked about a woman being able to 'regain her figure' after childbirth, which increased a woman's appeal to them:

> *It gives you space to care and plan for your family and for a woman it helps gain her figure and it promotes love in a family and makes one stress free because children, if many, may cry, and you get paranoid about it… and also promotes development.* - Kaikara, FP user, urban

Adrian, a contraceptive non-user, considered family planning to be the responsibility of a couple. He was of the opinion that the couple's relationship consequentially improved when they planned for a family within their means:

> *It is good because there are families that partners don't control themselves and want sexual happiness every now and then so in the end they deliver many children one after another… according to the standards of living of people in the village, they may not be able to care for these children. But if family planning is utilized, they space these children and it helps to plan for the children. I rather cater for the four children whom I want to learn/study to a certain level than having 16 children that I can't care for* […] *Another thing is that it creates love between the man and woman, however if a woman gets pregnant, the man may want to have some sex but the woman is fed up, so it promotes love in a family.* - Adrian, FP non-user, rural

Adrian's comments touched on the better educational opportunities for children in smaller families, while stating his own preference for fewer children who were educated rather than many who were not educated. Echoing similar views, Steven talked about the improved wellbeing of children when they were fewer and well-spaced, as parents were then able to better invest in these children's health and education:

> *Family planning helps in proper growth of children, in that when a child has been spaced well, he or she can grow very fast, and will not have other challenges like sicknesses.* - Steven, FP non-user, urban

Many of the male interviewees alluded to the overall better quality of life that resulted from well planned and spaced families:

A good, well planned family, it looks a happy family. That's the first advantage which I can give. Its members, they enjoy well, because they have access to their needs. In addition, its members, they can perform well in the community. Because they have accessed the basic needs and life care. – Bwanbale, FP non-user, rural

On TV we used to see families where a child was nine, another six and another four [years], *so it motivated me because these families were happily living… not living in a home with many children who just disturb you with poor hygiene. Family planning has helped people to prepare well for their families, with steady progress and good hygiene and keeps the woman's figure*. – Henry, FP user, urban

The emphasis on the happiness of a family came through strongly in many of the respondents' comments, particularly when smaller, well-spaced families were able to live comfortably and within their means. They acknowledged that contraceptive use was critical to achieving this better status, as well as lessening the burden that many of them shouldered in terms of supporting their families. Though they did not directly link being happy to contraceptive use, it was clear that the financial benefits they derived from family planning gave them the peace of mind to be content and have happy families.

7.4.2 The costs and consequences of contraception

With regard to their reasons for contraceptive opposition, or their reluctance to use contraception in the future, many respondents raised concerns about the negative contraceptive side effects that their partners had experienced. These included a loss of libido and irregular menstrual periods, as Timothy described:

My wife was injected after our second born, then she started having irregular monthly periods, two months [she] *used to go without for menstrual periods* […] *she felt headache, dizziness and she had gained weight… and around four months after commencing family planning, she started feeling abdominal pain and at times I would have intercourse with her and she bleeds there… So family planning has side effects* […] *some men say their women don't satisfy them because of family planning.* - Timothy, FP non-user, rural

As recognised contraceptive side effects, excessive bleeding, pain and loss of libido have been previously reported in the literature as barriers to contraceptive use (Hyttel et al., 2012; Mugisha & Reynolds, 2008). Women in the FGDs raised the concern that they would be unable to satisfy their partner sexually while dealing with these side effects. Men were often unhappy with the consequences that side effects could have on their sexual pleasure, and therefore opposed contraception (Kabagenyi, Jennings, et al., 2014; Sileo et al., 2017). Sanyu's quote below further emphasised the importance of a satisfactory sex life for men, and the relationship problems that could ensue as a result of loss of women's libido:

…there is that problem… of loss of appetite. Which has also created family problems for those people. It has caused a lot of violence in families. And it is one of the reasons which is even making divorce in families. Because now the woman has lost appetite for the man, yet the man has no problem, he's very normal, yeah….It causes cheating of the partner, like so. Because when I come here, you become stubborn, you say 'Ah I'm tired, I'm suffering from this and the other', then automatically the man has to go out. - Sanyu, FP user, rural

As the quote indicates, some men pursued casual partnerships outside of their marriage due to the loss of their partner's libido. Existing gender norms both prioritise men's sexual pleasure and reiterate the expectation that a woman is obliged to sexually satisfy her partner (though the same was not expected of men). Women who are unable to fulfil this role but who may be economically and socially dependent on their partner, are then further disempowered in their autonomy over their reproductive health and within a relationship (Blanc, 2001).

Some of the respondents were personally frustrated with issues caused by contraceptive side effects. To these men, contraceptive use was the direct cause of their partner's discomfort, which then impacted their own sexual pleasure, disrupted a woman's tasks in managing a household, and cost them money if women had to seek out healthcare provider to manage side effects:

> *Mostly few men want family planning and have bad attitudes towards it because of those side effects, tubular pain, bleeding… such men are tired of those things, while the old men say those things were not there in the past.* - Ivan, FP non-user, rural

Some respondents linked the experience of negative side effects to poor service provision, or lack of training on the part of family planning service providers. As described in section 2.5.6, the competency of service providers, can impact clients' experiences, particularly for the provision of long-term methods (Hyttel et al., 2012; Orach et al., 2015), as the quote below further elaborates:

Yes, side effects. Some face problems because if at all you go to a person who is not qualified. Like for the implants, if someone implants it in a part where it can give a bad effect. Not only that, some they just prescribe not knowing that this one, this kind of family planning, is not allowed for this person. They just prescribe, whereby it can cause very bad effects on the person. - Moses, FP user, urban

For some men, frustrations with family planning were further exacerbated when they felt unwelcome or poorly treated by service providers at family planning clinics (Hardee, Croce-Galis, & Gay, 2017; Kaida et al., 2005; Muheirwe & Nuhu, 2019). Men's interactions with HCWs have been associated with increases in contraceptive use (Kabagenyi, Ndugga, et al., 2014), and therefore it is important to recognise the potentially significant role that providers could play in increasing male involvement in family planning.

7.4.3 The peripheral influence of religion on family planning practices

Several respondents, mostly from urban areas, relayed the important influence of religion at a societal level. However, interviewees provided little evidence to suggest religion overtly influenced their own contraceptive practices. They mentioned Islamic and Catholic faiths in particular as being opposed to family planning, and that the beliefs of strict followers of these faiths became a barrier to contraceptive use in some communities:

For example, religion is not allowing you to use family planning. Basically, like the Catholics in Uganda here I think, I hear reports that it's not allowed to use family planning. So the culture thing, it affects the family planning method. - Jairus, FP non-user, urban

> *There are some men who are now ok with family planning, they can decide with their wife, but other men, like that, they also don't, like Muslims, like Catholics, they don't like it.* - Achen, FP user, urban

Similar to women in the FGDs, several men acknowledged these religions' stance on family planning, but still opted to disregard these rules. Francis explained that they often had no choice when it came to being able to manage, provide and care for their family:

> *Our religion Islam rejects family planning but according to the standard of living, we have to use family planning… but religion doesn't allow*. - Francis, FP non-user, urban

Religious beliefs have been acknowledged in past literature (section 2.5.1) as being a key influence on decisions regarding contraceptive use (Kabagenyi et al., 2016; Nalwadda, Mirembe, et al., 2011; Orach et al., 2015). However, as revealed by the respondents above, religious influence was sometimes ignored in the context of managing the size of one's family and thereby achieving a better quality of life.

The preceding sub-themes highlight the importance and value that men placed on the quality of life and wellbeing of their family, and how contraceptive use could both positively and negatively affect this. These sub-themes align with the previous themes in this chapter, which indicate that being able to successfully support a large family as the primary breadwinner and head of the household are important aspects to a man's identity and social standing. The centrality of the family unit in contraceptive choices and behaviour is a significant factor that family planning initiatives should recognise and focus on moving forward.

7.5 THEME 4: THE COMMUNITY GRAPEVINE: STORIES AS A SOURCE OF CONTRACEPTIVE KNOWLEDGE

In previous work around men's contraceptive knowledge in Uganda, mass media campaigns, health workers and the radio have been commonly reported sources of information (Dougherty et al., 2018; Kim & Arangwanda, 1997; Thummalachetty et al., 2017). In discussions how men in this study found out about family planning, some respondents mentioned health workers, mobile outreach clinics and health centres as trusted sources of information:

> *Information about family planning is from trained health workers in health facilities, they come and tell us about that so we get it from health facilities and the methods are provided there.* - Kaikara, FP user, urban

> *To get information about family planning, we have Health Centre III. Just a few metres from here. That is where we get the information. And even, we have what we call VHTs, they always come in our villages and sensitize people about family planning.* - Samuel, FP user, rural

Most respondents however, referred to the opinions of other men and community members when talking about their own contraceptive knowledge, particularly about the negative contraceptive side effects. Similar to women's FGDs, this was evident from the way participants phrased several of their statements, starting with 'I hear' or 'they say'. An example of this was Joshua's quote: "They say that family planning is bad because many women are getting disorders of the uterus… but health workers have put much emphasis on family planning." Steven remarked, "I know family planning; family planning loses appetite for men, getting sick and having irregular menstrual periods or completely stopping to have those periods." Though Joshua and Steven were certain that these side effects were caused by contraceptive use, they were not contraceptive users themselves and therefore were likely reporting someone else's story which they had heard in their community.

7.5.1 Making sense of fears and misconceptions around contraception

Some of the participants' accounts touched on the more common fears and misconceptions about family planning that have been reported previously, including the beliefs that contraception causes cancer and infertility (Dougherty et al., 2018; Kaida et al., 2005; Sileo et al., 2017). In most instances the men themselves did not make a distinction about whether these were side effects known to be associated with family planning, or if they were misconceptions that were circulated in the community:

> *Some people believe that when you go for family planning, like for example, in case you're going for Implanon or Jadelle, some may believe that the whole capsule can be absorbed in the body, and it can cause them to become infertile. Then some think that the pills, they can make them overbleed. So that's why some* [people] *don't go for them.* - Mukasa, FP non-user, urban

> *Yeah, it* [family planning] *can cause health problems, it can cause cancer, it can make you infertile, it can even destroy your eggs. Those are the beliefs I hear.* - Joseph, FP user, urban

> *Some people are scared that family planning destroys the intestines, I was also told family planning causes cancer so it is the reason people don't go for family planning."* - Jonathan, FP user, urban

Some respondents mentioned the belief that women who used contraceptives would eventually give birth to children with deformities, and that methods which required insertion (such as the implant and IUD) could 'get lost' in a woman's body. Once again it was evident from the phrasing of their quotes, using terms like 'I heard', that these were accounts from other people, for example:

They [family planning methods] *are bad in their action because I have heard a person who had used family planning during the time at school. She went for a family planning method for 10 years but at the end of the 10 years, she delivered two babies with abnormalities and they are mentally ill and on research they said it was because of the long use of family planning.* - Anthony, FP non-user, rural

...managing side effects, they usually are negative I think, like these long-term effects. For example, like with the implant, because I never experienced it but I heard someone saying when you get an implant, it moves. The one they put here [gestures at arm], *it moves up, you can't find it, something like that.* - Jairus, FP non-user, urban

As highlighted in the women's chapter, beliefs about contraceptive use being linked to cancer, infertility, and congenital deformities have been described frequently in the literature (Dougherty et al., 2018; Kaida et al., 2005; Sileo et al., 2017). These were similar to the concerns and fears raised in women's FGDs. Very few of their accounts though, were based on personal experiences of their partners, which demonstrates the power and influence of second-hand accounts or stories that were passed around through informal networks in communities, shaping opinions about contraception. The sharing of these accounts then continued the spread of incorrect information and misconceptions around contraceptive side effects:

Mostly I just hear them, from some women and their conversations. From those methods, some get bleeding, the women. Then sometimes other methods, they weaken their body, they don't work well, they become weak at their work once they enter in those methods. - Bwanbale, FP non-user, rural

The risk is that when a woman is using family planning, she may bleed for a long period of time and some people say if used a long time, a woman may not conceive again but personally I don't know but people have that talk. - Benjamin, FP user, urban

Though men did not directly cite side effects as hampering their own sexual pleasure, fears around such side effects interfering with the sexual pleasure of partners were reported as a barrier to contraceptive use in women's FGDs and previous studies (see Kabagenyi, Jennings, et al., 2014; Nalwadda et al., 2010).

These quotes demonstrated men's knowledge to be a combination of misconceptions (cancer, infertility) and known contraceptive side effects such as excessive bleeding. Only two respondents, both contraceptive users, acknowledged that many of these beliefs and misconceptions around contraceptives were mostly untrue. Their comments below reflect their understanding that experiences with contraceptive side effects could be different for different people:

Family planning programs promote development in the community and we have got information about family planning because they say that family planning causes cancer, but a man is not injected but he gets cancer… so it was a lie. - Kaikara, FP user, urban

Of course, what is good for me may not be good for another person so some may get disadvantages so it is like that… it depends on what information has been spread among people. - Samuel, FP user, rural

Though they did not elaborate further on these comments, their experiences as contraceptive users could be a reason that they recognised such beliefs to be misconceptions, particularly if they or their partners had had positive experiences with contraceptive use. Samuel's quote also

reiterated the power of information being spread in the community, and how these could influence people's views on contraception and their fears about side effects.

Paradoxically, when talking about sources of contraceptive information they would not trust, several men said they would not rely on "any ordinary person in the village who doesn't know about family planning*"*, as Sanyu remarked, or "any person who is ignorant about family planning, instead I ask a health worker" as Steven explained. Several men were of the opinion that their fellow community members often didn't have enough education or expertise to be trusted, as Francis said, "If she/he is not in the field of health, I cannot ask them." The quotes below outline their reasons in more detail:

> *I would not trust these people, like outside, the local people in the village. For them, with their beliefs, I know from their traditions. For me, I would not trust the traditionalists, but I would consider the health workers, because at least they know more, and I can learn from them.* - Mukasa, FP non-user, urban

> *If at all I just find a person who gives me advice about family planning, and more so what the method is, if I'm not aware of it, I would not trust that person. Just because he is new in my face, and because the information is new in my mind, so I would not trust that person.* - Moses, FP user, urban

Thus it was apparent that many men did not recognise the overt influence of other men's opinions and experiences on their own views. The distinction that Mukasa made between 'traditionalists' and health workers as different groups in society was also interesting; his comment seemed to relate back to a difference in education being a distinguishing factor

between men who still believed in the common misconceptions around contraception, and those who were learned enough to identify these as misconceptions (section 7.2.1).

A few respondents specifically mentioned they would not trust their parents' views, mainly because of a lack of awareness, and because their parents had different (and sometimes wrong) beliefs about contraceptives:

> *I can't ask one else apart from the health worker, I can't ask my father because they don't believe in it.* - Sanyu, FP user, rural

Mass media, particularly radio and television, was another commonly cited source of men's information; according to Joseph, "Yeah actually they put there some adverts, to educate people how to use [family planning]... on TV and on the radio", and Kaikara, "TV shows teach us those [family planning] methods and at the hospitals we are taught those methods". Their comments were in line with previous work that has shown mass media campaigns and radio programs to be particularly effective for family planning messages reaching both men and women (Dougherty et al., 2018; Gupta et al., 2003).

7.5.2 Conversations in the men's club

On the topic of whether men were comfortable talking about contraception with other men, most respondents felt 'free' about it and were quite happy to do so. Some respondents felt they could advocate for the benefits they had experienced, and thereby influence other men to use contraceptives; as Akiki, a contraceptive user, and Ivan, a non-user, respectively explained, "I tell them and they can copy me if they want", and "I am free with it and I don't have any problem and I even advise other people to go for family planning". These were interesting comments in light of some of the polarised views of contraception among the respondents, and seemed to imply that whether or not they were using contraceptives, they still felt comfortable

discussing their opinions and experiences with other men. Information from fellow male peers has been cited as a key source of men's knowledge about contraception (Sileo et al., 2017; Thummalachetty et al., 2017), and in this setting seemed particularly effectual when the benefits that these men had personally experienced were woven into their accounts:

> *I have no problem with it because I may have a friend who doesn't use family planning but has 10 children, comes and borrows money from me so I have to tell him to use family planning*. - Achen, FP user, urban

> *I feel very free talking to them about family planning. Because you can find somebody who cannot even help his children, but is still continuing to produce. The children are suffering - you find them when they are not being fed enough, they develop big stomachs, they have grey hair*.
> - Isaac, FP user, rural

A common thread in the quotes above again emphasised the financial benefits of family planning and reiterated a man's expected role in Ugandan society to be the breadwinner of the family. Their comments seemed to imply that in situations where a fellow man in their community struggled to fulfil this role, respondents found it acceptable to advise these men about family planning as a way of improving their situation. The consequences of whether men felt challenged by other men advising them, however, were not mentioned. Nonetheless, similar to the informal networks among women that were described in the previous chapter, informal structures of support among men in the community may also exist, and can be influential in determining men's attitudes, views and decisions on contraceptive choice and uptake.

A handful of respondents were hesitant to talk about contraception with their peers, for fear of judgement or concerns about their privacy; this was highlighted by Anthony who remarked, "Of course I select among those I tell, not everyone." Ochieng shared a similar view: "The

problem is that one may call you a fool, that 'What is the purpose of family planning?' So at times you reserve it." It is important to recognise that these respondents may represent a group of men who are not as willing or comfortable to share their views and experiences on what they consider to be a personal topic. This is a critical factor to acknowledge and address when tailoring programs that rely on peer educators and male ambassadors who advocate for contraceptive use (Ghanotakis et al., 2016; Stern et al., 2015), as all men may not feel as comfortable discussing this topic in a public space.

7.6 THEME 5: PATRIARCHY AND PROMISCUITY: REASONS FOR MEN'S MINIMAL INVOLVEMENT WITH FAMILY PLANNING

Several studies to date have looked at factors that influence male involvement in contraceptive decision-making and uptake (see section 2.5.2). Very little research, however, exists on men's own perspectives about male involvement, although improving male involvement has been a long-standing goal of family planning programs. Some studies that have evaluated interventions aimed at increasing male involvement have reported some success through facilitating spousal communication and changes in attitudes about gender norms (Ghanotakis et al., 2016; Shattuck et al., 2011; Stern et al., 2015); however, the continued and sustained effects of these interventions in the long-term are unknown.

This section describes respondents' reasons for men's minimal involvement with family planning. These included their perception that it was a woman's role to seek out contraception and hence men did not have an obligation or need to be involved. They also viewed condom use – as the main male contraceptive method available to them (vasectomy was not considered a realistic option) – to be more of a protective measure against unwanted pregnancies in casual relationships than as a family planning method for more stable, long-term relationships.

7.6.1 Women's responsibility as contraceptive users

Men's perspectives about women as contraceptive users were discussed in the interviews. Several respondents thought of contraceptive use predominantly as a woman's role since most contraceptive methods were female-centric, and therefore had to be sought out and used by women. Perhaps as a consequence of their own minimal role in contraceptive use, some men also expected their partners to be a main source of information about family planning. This is in line with previous research where women's own experiences and knowledge (gathered from healthcare providers, the media and other women) were a key source of contraceptive knowledge for men (Thummalachetty et al., 2017). This was also reflected in the quotes below:

> *At my home after my wife had gone for an education at the hospital and she came back, she explained to me.* - Akiki, FP user, rural

> *It was my partner who played the most part because she takes time to listen to programs about family planning on the radio.* - Benjamin, FP user, urban

From their accounts below, some men thought of women using contraception as something 'good' for the family and for themselves. A few urban respondents, in particular, related this to women enabling and assisting men in their role of financially supporting the family:

> *I know that such a woman knows family planning well and she is responsible enough.* - Jairus, FP non-user, urban

> *I view them as empowered because they deliver at the appropriate time and plan for their family*. - Achen, FP user, urban

In direct contradiction, other men, mostly from rural settings, viewed women who were contraceptive users as being unfaithful to their husbands, or using contraceptives to avoid a

pregnancy with another man. Ivan, a contraceptive non-user, was of the view that "…those women may have other men they love outside marriage, so she saves you from not getting children outside marriage…those women may be tired of marriage and decide to go for family planning. So those women are dangerous." Whether these views were part of the reason why he and his partner were not using a contraceptive method was unclear; however, the association of contraceptive use with promiscuity and infidelity among women has been previously reported in section 2.5.1 and in the literature (see Adelekan et al., 2014; Kabagenyi et al., 2016; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). Such perceptions of women were also mentioned in women's FGDs as being a challenge they had to contend with when seeking out contraceptive services. The distinction here between urban and rural respondents' views is noteworthy too; urban respondents may have more positive views about women's contraceptive use because they may face more economic hardships from urban living, and therefore be more aware and appreciative of the benefits that contraceptive use offers them. For rural men, on the other hand, traditional ideas about family size coupled community beliefs about the harms and stigma around contraception may be more ingrained in their views, and therefore leading to their opposition to women's contraceptive use.

Some respondents also referred to women who used contraceptives as prostitutes. The quotes below that illustrate this viewpoint were interestingly from two men who were contraceptive users themselves, which may signify the association of prostitution more with women who took the initiative to use contraception on their own, rather than all women who were contraceptive users. This was particularly apparent in the duality of Akiki's views:

> *I view them in two ways; responsible people, and some are prostitutes, because they know they won't get pregnant, forgetting that they may get diseases*. - Akiki, FP user, rural

> *They* [women who use contraception] *are prostitutes because they know they can't become pregnant.* - Ochieng, FP user, rural

Akiki's comment that women could still get STIs when they used a contraceptive method indicated that he did not associate barrier methods, such as condoms, as contraceptive methods used by women. This could also reflect the perception that condom use was not considered a method of family planning, but rather as provisional protection against unwanted pregnancies, particularly in casual relationships. Ochieng' views seemed to imply it was only prostitutes who would be motivated to avoid a pregnancy, which may reflect the expected role of women as child bearers.

Men's perceptions and attitudes towards women who are contraceptive users have shown to directly affect women's own contraceptive decisions and uptake (Thummalachetty et al., 2017). This can occur either of two ways, through men being supportive partners and encouraging or enabling their partners' contraceptive use, or more commonly through their direct opposition of contraceptive use, resulting in women being afraid or unable to use contraception, or doing so covertly. In the latter instance, the association of contraceptive use with infidelity then becomes more detrimental (Onyango et al., 2010; Shumba et al., 2016). In contexts such as Uganda, where polygyny is still a prevalent practice (Kabagenyi et al., 2016), women are further threatened by the fact that their partner could abandon them and find another wife if they are discovered using contraception secretly or against their partners' wishes (Kabagenyi, Jennings, et al., 2014; Sileo et al., 2017). These negative views about women using contraception are a point of concern, and may reflect existing views among the larger community that dictate woman's status and agency in a relationship, therefore being a barrier to women seeking out and using contraception.

7.6.1.1 Women are better candidates for sterilization

Most men were of the view that if a permanent method of contraception was needed, it was their partner who should get a tubal ligation (female sterilization) procedure. Ochieng and Steven, both contraceptive non-users, had these views to share:

> *It is hard but I think it's the woman to get* [a permanent contraceptive procedure] *but not me (laughs) to go for vasectomy*. - Ochieng, FP non-user, rural

> *It depends on the understanding but all the same send the wife…* - Steven, FP non-user, urban

Their views seemed to imply that a woman getting a permanent contraceptive procedure saved men from having a vasectomy, which again may be tied to the implications for men's fertility and masculinity discussed in section 7.2.2. Implicit in these views was the notion that once a woman had completed her childbearing role, it was acceptable for her to renounce her reproductive capacity if it meant preserving a man's fertility. As contraceptive non-users, these respondents' views could also reflect the previously mentioned idea that contraception was a 'woman's business' and it was up to women to seek out a contraceptive option, even if this entailed a more invasive and permanent method.

Other respondents' reasons for a woman having a permanent contraceptive procedure focused on this being more beneficial for women for avoiding unwanted pregnancies and the negative side effects of hormonal contraceptive methods; in Henry's words, "My partner would go for it, because most problems [side effects] affect women." Joseph talked about this from the perspective of a woman's ability to limit the number of children: "For me, it's better for women to have a permanent method. Because, if you have like six children, it is better for your partner to get a permanent method of family planning, so she doesn't get pregnant again." Once again,

the underlying assumption that contraceptive use is a woman's responsibility came through in these quotes.

Jairus, a contraceptive non-user, argued that a permanent contraceptive procedure was more suited for women because it was 'easier for them to accept' than it was for men:

> *For vasectomy, men can't accept it. There are very few. Because for me, I have seen men giving birth at 70, 80, 90! As old, meaning that they will not accept it. It is very hard. For the ladies, maybe it is ok for them, because usually they have complications. The moment you clock like 35 and above, it becomes very hard. You have complications to give birth. So maybe they may accept. Because if she is not having the method, she will also have that complication, you understand?* - Jairus, FP non-user, urban

His comments reiterate the cultural expectation in Uganda that men should and will want to continue to have children throughout their life, which also links back to the earlier theme that a man's status was defined by the size of his family (Theme 1, section 7.2). It was interesting that he described the inability to have children at an older age as being 'very hard' for men, which may refer to the implications for one's masculinity of being 'infertile' after a vasectomy. Inherent in his comments was also the assumption that women would readily accept a permanent method of contraception.

Both contraceptive users and non-users mentioned the belief that vasectomies negatively affected the health of men. For this reason, they preferred that their partner have the procedure:

> *It is women who must go* [for a permanent contraceptive method]*… they say that medicines used for family planning affects men, so its women to go.* - Francis, FP non-user, urban

It would be for my partner, because I hear and see men who go for family planning become weak and so it means I will become weak and not able to do any daily duties. - Musa, FP user, rural

While the myth that a man is weakened by a vasectomy procedure was common, the risks or recovery period associated with a woman undergoing sterilization did not seem to concern respondents. This was particularly noteworthy as women are expected to handle all the domestic chores and tasks related to childcare, and at times engage in manual labour as a form of economic support. Henry did acknowledge the possible challenges a woman could face with the permanence of a tubal ligation, but more so in terms of her reproductive capacity in future relationships she may have. His quote below again emphasised that men's fertility desires were more important than a woman's, from the viewpoint that a woman being sterilized would prevent her future partner from having children:

That question is hard because it affects the woman, she may get it and we divorce but the man she marries may wish to have children. - Henry, FP user, urban

Though more risky than male sterilization, female sterilization remains one of the most common and prevalent contraceptive methods across the world (Jacobstein, 2013; Shih, Turok, & Parker, 2011). This could be a result of the view that contraception is a 'woman's business', but also that if it came down to a choice between a woman or man undergoing a permanent contraceptive procedure, it was often the woman who was 'sent', as evidenced from the respondents' quotes above. Their opposition to vasectomy due to its implications for manhood as well as the fears around its adverse effects further contribute to this. At the same time, however, there have also been increases in the number of women desiring and opting for a permanent method of contraception, with case examples from Malawi and Uganda attributing

this to an increased demand for limiting childbearing and the increased availability and accessibility of these services (Jacobstein, 2013; Lutalo et al., 2015). Taken together, these observations may explain, to some degree, the choice of female sterilization over vasectomies as a permanent method of contraception in this study setting.

7.6.1.2 Navigating discordant fertility desires: Women's covert contraceptive use

Literature on covert contraceptive use cites discordant fertility preferences, partner opposition, and difficulties in spousal communication as some of the reasons for women to seek out contraceptives without their partners' knowledge (Biddlecom & Fapohunda, 1998; Heck et al., 2018). Covert contraceptive use has also been described as a way of shifting control of women's fertility to the women themselves, even if this is done surreptitiously (Heck et al., 2018). Men have been reported as angry and suspicious about their partners using contraceptives without their knowledge, sometimes even resorting to physical and emotional violence (Kaida et al., 2005; Orach et al., 2015). It was unsurprising then, that many of the men interviewed in this study echoed these views. In general, their perceptions of women who were covert contraceptive users were very negative and in some instances quite harsh.

Bwanbale, a contraceptive non-user, talked about covert contraceptive use as women going against a man's wishes, when he stated: "It is a very bad act because the man may want to get children yet his wife went for family planning." In similar vein Musa, a contraceptive user remarked, "They [covert contraceptive users] are wrong because the man may want more children." A sense of injustice at women's covert contraceptive use is evident in these comments. Men's fertility desires were once again given more weight than a woman's in these instances, which reflect the power dynamics and gender hierarchy in relationships where a

man's authority as the head of the household was to be respected and not questioned (Bankole & Singh, 1998; Wolff, Blanc, & Gage, 2000).

Other respondents framed covert contraceptive use as something 'bad' that went against a man's expectations of women as child-bearers. Women, through this role, were integral in enabling a man to achieve his desired family size, which subsequently reaffirmed his status in society. The possibility that women may be controlling their fertility through covert contraceptive use was thus regarded as disobedience. In effect, women were hindering men from achieving a better social standing through having more children, and disregarding their authority as the main decision-maker in the relationship. A quote shared by Ivan was an example of this thinking:

> *In case I get to know about it* [covert contraceptive use], *I leave her and my relationship with such a woman reduces because she would have done what I didn't expect.* - Ivan, FP non-user, rural

Longer spacing between pregnancies seemed to be the main clue to men that women may be using contraceptives covertly. Moses mentioned having to seek out other women to have children with in such situations:

> *Yeah, I might say now the* [first] *child is five years, six years, I'm expecting her to conceive, to have another child, but I'm not receiving any child, I say 'Ah! Maybe this one is also infertile.' So you find that you're trying to look for another person, and you find that the family came into a misunderstanding.* - Moses, FP user, urban

Some respondents referred to the expectation that husbands should always be informed or consulted about contraceptive use and, therefore, women's covert use negatively affected the trust within relationships. Joseph, a contraceptive user, elaborated: "Yeah, they don't even tell

the partner that 'I'm on family planning', then the trust is little, and is broken." Jairus further cautioned:

> *... for the family planning, two must agree. The moment you do it without the knowledge of the husband, it is a problem here. Men, they love that respect. You don't do things without telling them. You tell them 'but I have this view', even if he gets annoyed, you have told him… but the moment he realizes that you're using family planning* [secretly], *if he's humble, he'll just leave you there and get another* [wife]. *Or, if he's harsh, there are those ones who are very stubborn, they'll just send you away. It is good to use family planning, but sit around a table and you agree*. – Jairus, FP non-user, urban

His quote underscores the expectation that decisions about contraceptive use would be deferred to men's final views on the matter, and that men would determine the consequences a woman would face if she was found to be using contraceptives covertly. From his viewpoint, potential implications included a woman's partner sending her away, or abandoning her to find another woman, both of which were punitive and detrimental towards the woman. A few other respondents echoed these sentiments, explaining that covert contraceptive use could lead to marital problems or more serious consequences, such as a divorce:

> *They are not right because she has to inform her husband… We get problems among those women because I may reach a period of getting a child but when my wife is not getting pregnant and she may fear to tell me that she went secretly… finally you may get misunderstandings in the family and they may even divorce.* - Benjamin, FP user, urban

> *…to decide on family planning without the husband, that one I don't recommend for a woman. Because it's going to bring a lot of problems.* […] *in Uganda here, for us the culture is totally different. It is better to discuss, to tell the man and know his stand. Because the moment he gets to know about it, he can divorce you. He can ask you 'bring my children, and go! Never come back here!'. That is final. And the moment he tells others, also they will support. Even when he tells the family of where you come from, they'll say 'yes, you should have told the man. He is the boss'.* - Joshua, FP non-user, urban

These narratives alluded to underlying gender and socio-cultural norms in Ugandan society, particularly the decision-making dynamic between women and men, and the relative power that a man had in a relationship. They also emphasized men's status as head of the household, indicating that one's family and larger community could rally against a woman to remind her of her subordinate status, particularly if she was doing something against her partner's wishes, such as using contraception covertly. Steven went on to elaborate that though gender equality has progressed in line with changing social norms, men were still seen as having higher authority than women:

> *Nowadays, you can find a family with a bit of balance, but usually the man is the head. So if a woman fails to understand that, I don't think it will last for so long, the marriage. We have a problem here in Uganda, the ladies who are educated, they tend to forget* […] *you don't need to be inferior, but at least you should know that that is my husband, you do things that show that is your* [husband], *Someone* [a woman] *is working with a good job, getting a lot of money, and the husband is not,*

you tend to minimize him, and men don't love such things. - Steven, FP non-user, urban

A few respondents talked about how women were discovered using contraceptives secretly when they experienced negative side effects, such as continuous bleeding. In addition to the inconvenience that such side effects posed for men's sexual pleasure, men also felt that they should have been informed of their partner's contraceptive use so they could be more involved in managing these side effects, as Sanyu, a contraceptive user, explained: "They do it wrongly because you may get side effects but if [she] told me and there is any problem I can control it all." His reference to him being able to 'control it all' may reflect the expectation of a man's role of financially overseeing the wellbeing of his family. Several men also talked about their involvement from the viewpoint of handling the costs of side effect management. This again was a reflection of men's expected role as the breadwinner of the family, as Mukasa, a contraceptive non-user shared:

Ladies who use family planning on their own, at times they can be at a risk because they might go for some family planning, which can bring in other complications, which will require again a man to come in, so that they can solve that. So you find some time to be taken for that, the implant and the money needed. So at least it is better to consult a partner for money. - Mukasa, FP non-user, urban

Other respondents' comments pertaining to women's covert contraceptive use were a direct judgement of such women. Samuel, a contraceptive user, described these women as being selfish: "They think about themselves alone… I think they should talk to their partners first"; Timothy reiterated the previously described association of contraceptive use with prostitution when he said: "I think they [covert contraceptive users] are prostitutes. If it's me, I send her

away." These comments echoed the idea that women who took the initiative to use contraception on their own (covertly or not), were thought of as prostitutes or promiscuous. Another common interpretation of women's covert contraceptive use, as the quotes below suggest, was linked to spousal infidelity:

> *In communities the women use family planning as they can because some, they don't only have one man. Even if where I'm staying there are many, many women who don't have one man, so that's why they're using family planning. Because something can happen, but if they use that family planning, they'll be safe.* - Achen, FP user, urban

> *It means that they have sex outside marriage, that they don't want their husbands to know because it's not right.* - Adrian, FP non-user, rural

Some respondents seemed genuinely perplexed about why contraceptive use would be hidden from partners in a relationship. Only one respondent, Ochieng, acknowledged partner opposition as a possible underlying reason. Yet this was still not seen as sufficient grounds to justify covert contraceptive use, as his comments below indicate:

> *For me, I know that those people, when you join together, you become one person. Why hide from your partner, the information? Definitely it will lead to a family breakdown. Because once you try to tamper or play games within your relationship, definitely the outcomes, they will not be good. Therefore it is better at least to be open. Once he refuses, you look for other ways, but if not so, you continue convincing and explaining. But that system or matter of doing things in private, in secret, ah, it may cause family breakdowns.* - Ochieng, FP non-user, rural

While echoing the view that women were better off being upfront about their contraceptive use and facing the consequences, Ochieng also believed it was a woman's role to convince her partner that contraceptive use was a good idea. To him, a woman hiding such information from her partner was her way of tampering with the relationship. These perceptions could again be the result of hierarchies within a relationship that recognise men as the head of a household, further compounded by a sense of contraceptive antagonism among male contraceptive non-users.

From the excerpts above, a multitude of gendered factors seem to influence contraceptive decision-making among couples. The way these play out in relationships differ from couple to couple and in some regards vary with the man's level of awareness, openness and attitudes towards contraceptive use. Inherent in many of the respondents' quotes was the general expectation that women were to respect the authority and decisions of men in a family. This was despite changing gender norms, particularly in regard to the roles of men and women in a family, and in the changing societal and economic environment of Uganda, discussed under Theme 2 (section 7.3) in this chapter. Such changes have not appeared to influence the contraceptive decision-making process, particularly among men with more traditional, conservative views about gendered roles and family planning.

In this study setting, and the larger context of Uganda, the importance of gender norms and relationship dynamics in respect to contraceptive use cannot be emphasized enough. As evidenced from the excerpts above, patriarchal ideals about the roles, expectations, and power differentials between men and women in a relationship still hold strong. These factors determine the agency of women who wish to use contraception, particularly where men's desires for more children override women's desires for fewer children. This often leads to covert contraceptive use, especially when women assume their partners want bigger families and that they are opposed to contraceptive use, but are unable to discuss the subject with them

(DeRose et al., 2004). Men in this study, particularly contraceptive non-users, confirmed the fact that women who initiated their own contraceptive use or even a discussion about contraception could face serious repercussions such as violence or abandonment.

7.6.2 Men's minimalistic role as contraceptive users

Respondents shared some of their own perspectives and experiences about male involvement in family planning. Benjamin and Moses, both contraceptive users, explained the previously mentioned perception that their involvement 'as a man' was minimal since contraceptive use was mostly a women's responsibility. This was in line with the idea that men made the final decision around contraceptive use, but left the realization of this to their partners (Blanc, 2001):

> *I won't talk about it as a man but it's my wife who uses it, I don't have enough time to discuss family planning issues with my wife so I don't have much knowledge about it.* - Benjamin, FP user, urban

> *As a man, I don't stay at home I can even take two weeks when I am not at home but my wife goes for family planning services when time is due.*
> - Moses, FP user, urban

For several other respondents, using a male method of contraception was a way of being involved. Most men talked about this in relation to condom use; Samuel summed his role up by saying, "I talk to health workers, I bring condoms and we use them." Robert talked about the possible consideration of vasectomy in the future: "[Male involvement] is when we use condoms and if one has decided you go for vasectomy." Other men talked about supporting their partners (in different ways) to seek out and use contraception:

I can get involved by bringing my wife for family planning. - Joshua, FP non-user, urban

[Male involvement is] *sending our wives for family planning… and us using condoms.* - Jonathan, FP user, urban

Actually it is men who should use family planning mostly, though their methods are few… but they give their women support to go for family planning so it is the man to support women for family planning. - Kaikara, FP user, urban

There was also a shared sentiment that men did not have to play a key role in family planning, because their partners would handle such matters, as Henry explained, "I go and get condoms but if I am busy, I send my wife to go and pick them." This too linked back to notion that women were left to implement men's contraceptive decisions, further emphasised by Joshua, "If one is married, you can get involved but its women mostly who go for family planning".

A few men who were contraceptive users considered their roles in marriage and caring for their family as their way of being involved in family planning. In Jonathan's quote below, he considered being faithful to this partner as a way of being involved in family planning:

I have to trust my partner and her too, I have not to go on with other women because I may get STIs from there or even getting unwanted pregnancies… and another is teaching my partner a way we have to we have to space between births. - Jonathan, FP user, urban

With regard to engaging men in family planning, some respondents highlighted the practical quandary that most family planning programs were usually targeted at women. For this reason, men did not see it as their role or place to participate. Past studies, particularly those that have evaluated family planning program interventions, have reported the 'female-centric' nature of

these programs as being a deterrent to male involvement (Kaida et al., 2005; Sileo et al., 2017). As Jairus explained, male involvement was not obligatory in the way existing family planning programs were set up, and therefore most men did not feel their presence was warranted or needed:

> *Yeah, it might be involving men, it may have a component of men, but it is not mandatory, you understand? For example, you tell a wife or a woman to come with her husband, and he deliberately says 'I won't go', nothing you do as a health worker will work. Because there is no law that is going to tell the man 'you go.' Because the health facility, it basically works for the woman. It doesn't have that legal thing, that if you don't come, you're going to do this, something like that, so it's not effective for them.* - Jairus, FP non user, urban

Mukasa opined that men automatically switched off when family planning was mentioned, as they assumed these messages were aimed at women:

> *...the best way, you can maybe make some announcements on radios, and bringing some other topics. Because if you tell them directly that you're going to teach them about family planning methods, some men they think that family planning is mainly for ladies. So you call them for any other issue, like maybe talking about development issues, like creating projects or earning income, then when they come, that's when you can now bring in this issue.* - Mukasa, FP non user, urban

His thoughts that family planning information should be integrated within other topics were echoed by a few other respondents, who suggested approaching men with broader topics of financial management or economic development, which they considered more relevant,

compared to a specific focus on family planning. Steven suggested targeting groups of men where they were gathered socially, such as at sport gatherings, rather than reaching out to individuals:

> *For men, I think that there are approaches* […] *you can see what activities men usually involve in. For example, if they're involving in sports, like football, you come with a strategy, how you can sensitize them in that football activity. They're usually many, that I can tell you, it* [football] *makes many to come from different corners* […] *So if you can design a program, you'll find many of them, rather than going to their work places, it'll be hard* [...] *but there* [football match], *you can get like 200 at once.* - Steven, FP non-user, urban

Some respondents mentioned monetary incentives as an important tool in getting men's sustained attention and participation in family planning programs. This again tied in with men's roles as breadwinners of the family, and that economic considerations were a crucial motivator for men to be involved in family planning, as Moses explained below:

> *… if you say that 'I want men on such and such a day, at such and such a venue, come' for them, what they say is, 'Is there an allowance?' (laughs) So more finance that supports more men is needed. Otherwise, no man you can involve. So through that payment, you can grab them, but they won't come for the program, they'll come for the allowance (laughs)* […] *But for you, you will be applying some knowledge to them.*
> - Moses, FP user, urban

Isaac talked about the value of having an external yet authoritative figure talk to the community as a means of overcoming apathy toward family planning messages, thorough a different, *outside* voice:

> *To sensitize these people, we need an outsider. Because they think these people from our community* […] *are singing the same song. They don't see any difference. So if they bring in an outsider, maybe those ones can convince them. They can say 'It's not only this one who is talking, but even those ones from outside, they are talking about the same thing. Therefore, it means what they are telling us is a good thing.* - Isaac, FP user, rural

It is evident from the excerpts above and previous sub-themes in this chapter that men's perceptions of male involvement, and the extent to which respondents saw their involvement, differed widely. It is important that family planning programs recognise and account for these differences in their focus and implementation. Strategies to increase male involvement in family planning in Uganda have included community dialogues and outreach efforts around reproductive health, workshops focused on addressing unequal gender norms, dedicated clinic days for men offering services for circumcision, STIs/HIV testing and family planning counselling, radio programs and peer education (Ghanotakis et al., 2016; Stern et al., 2015). The employment and training of male community health workers as part of VHTs has also had some success in the engagement of men in their own communities (Kipp & Flaherty, 2003a; Musoke, Ssemugabo, Ndejjo, Ekirapa-Kiracho, & George, 2018). As mentioned at the start of this chapter, many of these programs have been successful and effective at the time, but the impact of any sustained behaviour change resulting from these interventions are unknown. The suggestions offered by respondents could serve as further programmatic recommendations in tailoring and tweaking family planning strategies and initiatives moving forward.

7.6.2.1 Condom use: Men's distinctions between family planning and contraceptive use

Respondents' views on vasectomy as a contraceptive option have already been discussed under Theme 1, section 7.2.2; almost all respondents were opposed to vasectomy as a male contraceptive method. With regard to condoms as the only other male contraceptive method available, respondents' views were more mixed. A common phrase used to describe condom use was that *'a sweet in a polythene is not sweet'*, implying men's sexual pleasure and satisfaction were hampered when using condoms. This has also previously been reported in the literature (see Plummer et al., 2006) and was stressed by Joshua: "I feel bad [to use a condom] because I don't get that natural desire in sex."

Some men saw value in using condoms when compared to other hormonal contraceptive methods that had side effects, as Kaikara said, "I don't have reason for not using condoms because it has no problem to avoid unwanted pregnancies… but other methods have limitations." This was particularly true if they saw a vasectomy as the only other option available to them as men, as expressed by Akiki, "I think men should use only condoms because vasectomy has side effects, but condoms are good." The 'side effects' of vasectomy referred to here may be the permanence of the method and the implications of men's inability to have more children. It may also refer to the belief among some men that vasectomy made them weaker, as previously discussed in section 7.6.1.1 (see Appiah, Agyen, Garti, & Menlah, 2018).

Though some respondents described themselves as condom users, several of them talked about condom use specifically with sexual partners outside their marriage. Anthony's quote below highlights this, though in this instance he described himself as a contraceptive non-user, implying that he did not consider condom use outside marriage to qualify as a method of family planning:

Now that thing [a condom] *has advantages and disadvantages because I go to recreational places, but most men who use condoms use them outside marriage.* - Anthony, FP non-user, rural

While most respondents emphasised that they 'always' used condoms outside their marriage, some respondents said they occasionally used condoms within their marriage. Henry clarified that this was because condom use was more practical and suited for use in relationships outside marriage, whereas within his marriage, his wife used an injectable, which was more reliable for consistent, longer-term contraceptive use:

At home though I don't have a condom I can play sex with her [wife] *but the one outside marriage, if I don't have a condom I may sleep with her and she gets pregnant. And another thing is that condoms are safe just for one day because I may have few condoms and may not be effective so the home method is better.* - Henry, FP user, urban

A quote from Francis, another contraceptive non-user, highlighted the use of condoms within stable relationships as possibly raising the issue of mistrust between partners: "If one is to have many sexual partners, there one can use it [a condom] to protect against STIs/HIV and also avoiding pregnancy, but like me who has a girlfriend I trust and who trusts me, I can't use it". Condom use within marriage has been reported in the literature as being a rare practice and discussion topic among married couples (Blanc & Wolff, 2001; Williamson et al., 2006). Insistence on condom use among married couples was therefore seen by most respondents as uncommon or suspicious. Joshua, another contraceptive non-user, echoed this view by saying: "I don't agree with it [condom use] because I have one partner and I trust her alone." The quotes below further indicate that some men viewed condom use as undermining values, such as trust and fidelity, which they consider central to their marriage:

I know she has other reasons [for asking to use a condom] *because for me I don't have sex outside marriage so it means she doesn't trust me.*

- Adrian, FP non-user, rural

That one [condom use among married couples] *I don't think it is common. Because what I know, especially for married couples, a condom, they use it once, so meaning that you have to use many condoms. It is rare, it is usually on the side of the woman* [to use family planning]. *Because for them, they can for example, get the pills for three months. There are very few who use a condom when they are married.*

- Jairus, FP non-user, urban

Jairus's comments also reiterated the perspectives that within a marriage, it was expected that a woman would seek out and use contraception, that there were more contraceptive options available for women, and condoms were not suited in such situations because of their short-term nature. Condom use was not considered to be 'family planning', particularly if it was for protection against unwanted pregnancies within extra-marital relationships. Men's ideas about family planning thus seemed to be more about the spacing of pregnancies and methods their partners used for this purpose.

A few respondents, however, said they were all right with their wife asking them to use a condom within their marriage, if they saw her having a good reason for this. For instance, some men were agreeable to the idea of condom use in situations when their wife was having her period, or in the last week of her contraceptive pill cycle (they understood that these were her unsafe days), as the quotes below illustrate:

For example when my wife is from her menstrual periods, I have to protect myself with a condom but after two weeks, it's okay I don't use a condom. - Sanyu, FP user, rural

Now, I mostly use it [a condom] *outside marriage but in the home I use it in her unsafe days.* - Ochieng, FP user, rural

I feel okay [if partner asked to use a condom] *because I know that she is not ready for getting pregnant.* - Musa, FP user, rural

Some men also emphasized that condom use was often associated with STIs/HIV protection, though none of the respondents specifically mentioned this in regard to their own extra-marital affairs. This association is often explained in the literature as a result of the push for condom use as part of the ABC approach of HIV prevention campaigns in earlier decades, when the HIV epidemic was at its peak (Green et al., 2006), and is highlighted further in the following quotes:

It [condoms] *may be for prevention of HIV/STIs* […] *but blacks don't want condoms.* - Ivan, FP non-user, rural

Yes, majority, they use condoms, more so for AIDS protection. But not for pregnancy. Those people are told that they use condoms to prevent AIDS but not pregnancy. - Achen, FP user, urban

Contraceptive users mentioned a few key factors that influenced their choice of condoms. Availability and convenience were the most common reasons, as Kaikara highlighted:

That method of condom use is easy, always available and can be provided anywhere other than the other methods with limitations… and are readily available at hospitals, family planning organizations. The

greatest percentage [of men] *are using a condom.* - Kaikara, FP user, urban

Cost was another factor that was discussed. As part of the Ugandan government's initiatives around free contraceptive service provision at public health facilities, condoms are available at no cost and are also often distributed for free by VHTs in their communities. Drug stores and shops in most villages also sell condoms at very low prices, and therefore condoms were easily accessible for most respondents, as Joseph said, "For me, it is easy. And it is for free, by USAID. You don't have to pay." The lack of a significant cost and the dual protection offered were critical factors that led them to use condoms, even if men were not too pleased with the method itself:

In Uganda condoms are free… and even if not, they are cheap so I think it is good because condoms protect against STIs and unwanted pregnancies. - Achen, FP user, urban

A man in Africa doesn't have enough funds so we use the cheapest family planning method [condoms] *but it's not our liking but because of our low funds.* - Benjamin, FP user, urban

Lastly, familiarity with a method, its effectiveness, and having satisfactorily used condoms before was important in continuing to use them, as Robert explained, "It [condom use] gives me comfort… because I don't get any problem." This sentiment also ties back to the lack of side effects experienced with condom use, which for some men was more significant than sexual dissatisfaction that other respondents complained about.

7.7 SUMMARY AND CONCLUSIONS

The preceding sections on men's perceptions about contraception demonstrate that there are a multitude of factors and barriers that contribute to their overall attitudes towards contraceptive use. These include their own views on contraceptive methods, their opinions about women who use contraceptives and their sources of contraceptive information. Often, these factors do not operate in a silo. The significant role that men play both as enablers and barriers to women's contraceptive use is the result of a complex interplay of influences shaping men's own perceptions of contraception. It is important that these be recognised in the context of how they affect women's contraceptive decisions and uptake.

Existing gender norms play a critical role in dictating men's (and consequently women's) contraceptive decisions, choices and behaviour. Men in this study spoke in great detail about the distinct roles of men and women in Ugandan society, how these played out in their expectations of women in a relationship, as well as how they subsequently affected contraceptive decision-making and use. Men recognised themselves as the heads of households with more authority than women when it came to final decisions in the family; this included women's fertility choices. Additionally, respondents' ideas around engaging men better mostly tied in with their role of ensuring financial security and support for their families. While some men were in favour of family planning and recognised its benefits, the ways in which women decided about and sought out these services was equally important to men, particularly in terms of consulting them and getting their approval as partners and authority figures.

Contraceptive use initiated by women, and more so covert contraceptive use, were therefore strictly frowned upon by men. Other respondents were opposed to contraceptive use due to negative side effects their partners experienced, which then impacted men's sexual pleasure and/or cost them money. The existence of fears and misconceptions around family planning

were also common among men, particularly so because they greatly valued the accounts they heard from other men as a source of knowledge about family planning.

Men's own experiences with male methods of contraception were not described in a favourable light. Vasectomy was not considered a realistic option by most men as it permanently altered their fertility, sense of identity and status as a man. Condom use reserved largely for casual sex and STIs/HIV protection rather than as a method of family planning. For these reasons, among others, contraception continued to be seen as 'a woman's business', with little need for male involvement.

8 DISCUSSION

The overall objective of this mixed methods study was to understand unmet need for contraception in Uganda. The specific aims were to:

- Analyse overall changes in contraceptive behaviour among Ugandan women and men over time;
- Identify current predictors of contraceptive use among women and men in Uganda;
- Understand contextual and cultural factors and barriers that affect contraceptive uptake in the Busoga region of east Uganda;
- Explore men's perspectives on contraception and male involvement with family planning in these communities; and
- Offer recommendations to better engage women and men in family planning initiatives and ultimately improve contraceptive uptake.

This chapter presents a contextualised discussion of the results of this study, in four main sections. The first section, in response to the first aim of the study, examines the changes in contraceptive use among women and men in Uganda over time. The second section addresses the second and third aims of the study, by discussing current predictors of contraceptive use among women and men (from the quantitative phase) as well as factors and barriers that affect women's use of contraception in the Busoga region (from the qualitative phase). The third section seeks to explain the reasons for low male involvement and partner opposition to family planning from the perspective of men, situated in the greater context of gender norms and patriarchal practices in Uganda. Finally, the last section describes the strengths and weaknesses of this study, as well as a few personal reflections around the research. The last aim of the study is addressed within the final Conclusions chapter, together with recommendations for future research, policy and practice around family planning in Uganda.

8.1 INCREASES IN CONTRACEPTIVE USE IN UGANDA

The results of the first quantitative study demonstrated that both any and modern contraceptive use among women and men have significantly increased over time in Uganda (Namasivayam et al., 2019). To reiterate, 30.3% of women, and 39.9% of men of reproductive age in Uganda in 2016 were using a contraceptive method (modern or traditional), an absolute increase from 13.4% of women and 20.3% of men in 1995. Where modern contraception was concerned, 27.3% of women and 35.9% of men were using a modern method in 2016, an increase from 7.4% and 10.4%, respectively, in 1995. Increases in contraceptive uptake were also steeper and more pronounced in later years compared to earlier years for both women and men.

The observed changes in contraceptive use have important implications. Contraceptive prevalence rates, as well as met and unmet need for contraception are indicators of women's abilities to actualize their reproductive intentions. The overall increase in contraceptive use over time in Uganda should then, in theory, be associated with a reduction in unmet need for contraception. Though DHS estimates of unmet need did not necessarily reflect a steady decline over the study period between 1995 to 2016, there has been a decline in unmet need from 34.3% of married women in 2011 to 28.4% in 2016 (Uganda Bureau of Statistics, 2018). The proportion of women with an unmet need for spacing also declined from 20.8% in 2011 to 18.3% in 2016; similarly, unmet need for limiting declined from 13.5% to 10.1% of married women in the same time period (Uganda Bureau of Statistics, 2018). That women and men's contraceptive use has increased with time and unmet need for contraception among women has decreased over time are positive, reassuring outcomes. This is also encouraging in terms of progress towards the goals of Uganda's FP-CIP, which are to reduce "unmet need for family planning to 10% and to increase the modern contraceptive prevalence rate to 50% by 2020"(Ministry of Health Uganda, 2014). However, with the most recent contraceptive prevalence rate in Uganda being 39% (in 2016) and unmet need standing at 28.4% among

married women, it is unlikely that these goals will be met within the stipulated timeframe. This only reinforces the notion that there remains much work to do in reducing unmet need and improving contraceptive uptake in Uganda.

The use of traditional contraceptive methods showed a decline over time in Uganda, and was rarely mentioned by respondents in the qualitative phase. The few FGD respondents that did talk about traditional methods described accounts they had heard from 'people in the villages', implying a distinction between users of modern and traditional contraceptive methods. This is in contrast to countries such as Nigeria and Tanzania, where traditional contraceptive methods are still widely used and acknowledged (Ajayi et al., 2018; Msoka, Pallangyo, Brownie, & Holroyd, 2019). Given that traditional contraceptive methods can have varying levels of effectiveness, it is encouraging to observe that modern methods in Uganda have gained more acceptance over time.

Though men's reported contraceptive use in this study included methods used by their partners, the increase in the percentage of men using condoms across the study years, together with a corresponding decrease in men's contraceptive non-use over the same period, is significant. This is particularly so given that condom use has been largely associated with HIV prevention and protection efforts in the past (Green et al., 2006); condom use is still more commonly linked with casual sexual relationships rather than monogamous partnerships (Maharaj & Cleland, 2005). These views were also echoed in the interviews with men in this study. However, as previous research on male attitudes toward contraception have shown, communication and educational campaigns via mass media and community-led initiatives can significantly increase contraceptive use, including condom use (Mwaikambo et al., 2011; Piotrow et al., 1992; Shattuck et al., 2011). Given the increased sensitization and continued programmatic efforts around family planning in Uganda in recent years, these increases among men are likely reflective of a shift in their attitudes and receptivity towards contraceptive use.

It is equally important to acknowledge the continued and widespread covert contraceptive use among women in Uganda, with many men not being aware of their partners' use of contraceptives (Adelekan et al., 2014). The figures for men's contraceptive use in this study are hence a direct indication of their own awareness and choice to use contraception within their sexual relationships.

Men's participation in family planning decisions and initiatives has long been advocated for as a crucial factor for effective fertility regulation (Helzner, 1996; Sternberg & Hubley, 2004; World Health Organization, 2002). However, patriarchal and socio-cultural norms around male-dominated decision-making and a lack of spousal communication on fertility preferences, the timing and spacing of pregnancies have been cited as barriers to effective male engagement in family planning (Kabagenyi et al., 2016; Orach et al., 2015; Paek et al., 2008; Vouking et al., 2014; Williamson et al., 2006; Wolff, Blanc, & Ssekamatte-Ssebuliba, 2000). Given that no studies have considered men's contraceptive behaviour over time, and relatively few have looked at barriers to male involvement in contraceptive use in Uganda, the results of this first study are thus novel and encouraging. These findings also indicate the cumulative success of efforts to improve male involvement in family planning and reproductive health.

8.2 PREDICTORS OF, AND BARRIERS TO CONTRACEPTIVE USE

8.2.1 Current predictors of contraceptive use

Current predictors of modern contraceptive use among women and men in Uganda were the focus of the second quantitative study (Namasivayam et al., 2020), which were then further contextualised in the qualitative studies. This focus was motivated by a lack of knowledge around predictors of contraceptive use at the individual, familial and community level, which are critical to streamlining programs and policy to more effectively address the determinants

of unmet need, as well as to ascertain the more underserved population groups for targeted outreach efforts.

Knowledge about modern contraceptive methods was exceptionally high among both women and men (>95% of participants). This confirms previous reports that obtaining information about family planning appeared unproblematic for people of reproductive age in Uganda (Agyei et al., 1995; Alege et al., 2016; Asiimwe et al., 2014; Dougherty et al., 2018). However, this finding also underscores the KAP-gap that still exists between contraceptive knowledge, and contraceptive practice, and reinforces the fact that high levels of awareness of contraception do not necessarily translate to high levels of contraceptive uptake (Mills et al., 2010). As the findings from the qualitative phases in this study and previous literature have shown, a myriad of factors and barriers contribute to high unmet need, and will be discussed in further detail in the section 8.2.2.

The majority of the participants accessed contraceptive methods at public health facilities, though for many women, private health facilities were also a popular option. Cost is a major factor in driving most contraceptive users to public health clinics, as contraceptive methods are provided free of charge at these centres. However, the unavailability of certain methods, particularly more popular options such as the injectable, could be a reason for women to seek out services at private clinics, despite the cost they may incur (Ketende et al., 2003; Nalwadda, Mirembe, et al., 2011).

For women, significant associations of modern contraceptive use were found with individual factors such as education, parity and marital status, and socioeconomic factors as measured by the wealth index. Women's higher educational levels and socioeconomic status as well as age, parity and place of residence (urban versus rural) have in the past shown associations with higher rates of contraceptive use (Agyei et al., 1995; Andi et al., 2014; Asiimwe et al., 2014;

Rutaremwa, Kabagenyi, et al., 2015). Women with better access to education are usually more aware of the benefits of family planning services, and urban residence and higher socioeconomic status generally affords increased opportunities and better access to contraceptive options (Andi et al., 2014; Ketende et al., 2003). Older women and those with several children are also more likely to use contraception to limit their number of subsequent pregnancies and manage the size of their families (Asiimwe et al., 2014). This second study reaffirmed that these factors remain significant predictors of contraceptive use, and confirmed the importance of women's education and empowerment to increasing contraceptive uptake.

Non-significant factors for women included family planning awareness through media or discussions with a health worker, religion, and getting money, and/or permission for treatment. The non-significance of these variables may imply that levels of family planning knowledge are already high among women, and that contraceptive method costs are not too critical a barrier to women's contraceptive uptake. Such changes could reflect a culmination of program and policy successes over the last two decades, particularly in increasing knowledge about family planning, and removing the barriers of cost. Though religion has been acknowledged as a key determinant of contraceptive use in Uganda (Kabagenyi et al., 2016), the non-significant AORs for religion across all models could reflect comments made by women in FGD about the ways they subverted religious precepts in order to manage the size and wellbeing of their families.

The likelihood of modern contraceptive use among women was lower if distance to the nearest facility was reported as a problem. Accessibility to health clinics is a common challenge for Uganda's largely rural population due to large distances and significant transport costs (Asiimwe et al., 2014; Jarvis, Wickstrom, & Shannon, 2018; Uganda Bureau of Statistics, 2016). Community health workers, VHTs and mobile outreach clinics remain the primary source of healthcare in these settings (Stanback et al., 2010). These urban-rural disparities are

also accounted for in Uganda's FP-CIP, and the continuation of these efforts is crucial to ensuring that these rural communities are reached and their contraceptive needs are met.

At the country-level, women's most common reasons for contraceptive non-use were notably fertility-related, followed by method-related concerns. Fertility-related reasons for women included breastfeeding, postpartum amenorrhea and/or engaging in infrequent sex, which are situations where continued use of contraception may not seem necessary. Fears and misconceptions about potential contraceptive side effects could explain the high proportion of method-related concerns, which were also reported by women in the FGDs. These findings will be discussed in more detail in section 8.3.1.

Unlike for women, only one previous inquiry by Kabagenyi et al. (2014) has looked at individual-level factors associated with men's contraceptive use in Uganda, based on DHS data from 2011. The second quantitative study in this thesis indicated that education, marital status, number of children and wealth index were significantly associated with male contraceptive use. In the qualitative interviews, some respondents alluded to the idea that men who more educated tended to favour contraceptive use, and considered them to be different from other men 'in the village'. While a few studies in other African countries have reported men's higher education levels being associated with higher levels of contraceptive approval and uptake (Bietsch, 2015; Kim & Arangwanda, 1997; MacQuarrie, Edmeades, Steinhaus, & Head, 2015), this is the first study to show this association for men in Uganda. These findings collectively provide evidence for investing in policy and programs that advocate for men's education, particularly since increasing male involvement in contraceptive decisions and discussions has been a long-standing goal on the family planning agenda (Adelekan et al., 2014; Stern et al., 2015).

Non-significant factors for men included place and region of residence, religion and age. For men, this may imply that contraceptive access is not constrained by geographical factors. Male interviewees also echoed comments made in women's FGDs that religious beliefs were

superseded by the practical challenges of supporting a large family. Furthermore, age may not be significant in contraceptive decisions as men's reproductive capacity tends to span over a longer period of time; this was evident from some of the quotes made by male respondents pertaining to men's fertility expectations and desired family size.

Awareness about family planning via the media or through discussions with a health worker was also associated with modern contraceptive use among men. Where media exposure is concerned, this is in line with previous work that has shown television and radio to be effective for the dissemination of health messages (Gupta et al., 2003; Rutaremwa, Kabagenyi, et al., 2015), and lends evidence to show that these are still relevant and appropriate channels for the distribution of health information. In interactions with health workers, women are often more likely than men to engage with a health worker through visits to the health centre for their own health or their children's. Therefore it is noteworthy that in the second quantitative study, men who had interacted with a health worker had higher odds for contraceptive use, which was also reported by Kabagenyi et al. (2014). As family planning programs have been criticized for mainly focusing on women in the past, this finding provides evidence for the success of men's engagement with health workers and highlights a further opportunity for increasing male involvement, particularly via integrated health programs (Stern et al., 2015).

8.2.2 Barriers to women's contraceptive use

The factors raised by women in the FGDs and men in the interviews point to contextual factors and barriers that contribute the high level of unmet need in the Busoga region, and thereby

provide critical information for improving the reach and effectiveness of family planning initiatives in these districts. While findings from the FGDs and interviews have been examined in detail in the respective results chapters, the next section will provide a more comprehensive discussion of some of the common themes raised by both women and men.

8.2.2.1 Negative beliefs and fears about contraceptive side effects

Both women and men spoke in detail about the existence of fears and misconceptions around contraceptive use in their communities. The association of contraceptive use with threatening health outcomes such as cancer, infertility and congenital deformities was common, and instilled fear among potential contraceptive users and the community, as has been reported in previous studies (Diamond-Smith et al., 2012; Kaye, 2006; Orach et al., 2015; Shumba et al., 2016). The reliance on testimonials and 'knowledge' from fellow community members as a source of information about family planning was also mentioned by both women and men, and in many instances served as a means to propagate existing contraceptive misconceptions. Several men also cited misconceptions as a reason for their fear of and opposition to contraceptive use. Very few respondents acknowledged that they knew such beliefs to be false, and the number of satisfied users disseminating positive accounts of contraceptive use were far fewer than those relating the harms of contraception to their peers. In recognising the power of community beliefs and testimonies in determining health decisions and behaviour, particularly in collectivist societies such as in Uganda, it is crucial that such beliefs are dispelled through correct information from trusted sources of information in the community. The testimonies of satisfied users who confidently disagreed with these beliefs on account of their personal experiences could be integral in debunking existing misconceptions and allaying fears around family planning, and eventually changing the conversations and attitudes of other women towards family planning.

In addition to misconceptions around contraception, many respondents were also fearful about experiencing negative side effects from contraceptive use. These findings may signify the limited success of educational efforts in addressing these concerns around family planning (Hyttel et al., 2012; Kakaire et al., 2014; Kibira et al., 2015; Tibaijuka et al., 2017). Channels of communication about these side effects were the same as those of the contraceptive misconceptions; the difference, however, was that some of the known contraceptive side effects (e.g. excessive bleeding, a loss of libido) had been experienced by women themselves and therefore stemmed from legitimate, experiential accounts. For women in particular, these fears were a significant barrier due to the potential consequences that would arise if such side effects became a reality. For instance, many women were worried that a loss of libido would negatively impact their sexual relationships with their partner (Willcox et al., 2019). Facilitating the sexual pleasure of a man was the expected role of women within a relationship, and women who failed to fulfil this role could face serious consequences such as violence or abandonment from their partner. Similarly, if women had to use contraceptives covertly, side effects such as excessive bleeding were challenging to hide from their partners.

Men too were concerned about their partners experiencing side effects. Their partners' irregular menstrual periods and a loss of libido impacted men's own sexual pleasure as well as their financial responsibilities in instances when they had to provide money for their partners' management of these side effects.

8.2.2.2 Contraceptive method-related issues

Women and men mentioned varying levels of satisfaction and dissatisfaction with the contraceptive methods available to them, as well as their experiences using different methods. Women were mostly inconvenienced by the negative side effects such as excessive bleeding,

fatigue and a loss of libido, which consequentially impacted their daily activities as well as their sexual relationships with their partners; this is in line with earlier work that describes side effects causing contraceptive discontinuation or non-use (Hyttel et al., 2012; Kibira et al., 2015; Lutalo et al., 2015). Additionally, the use of short-term methods such as the injectable or pills inconvenienced women as they had to return to the clinic regularly to refill their prescriptions, incurring time and transport costs. These challenges were exacerbated when stocks of contraceptive methods were not regularly available at the clinics. Other challenges that affected women were the limited availability of trained providers to insert (and subsequently remove) long-term methods such as the implant, and the resulting costs that were incurred, which echoes similar conclusions from other studies (Ketende et al., 2003; Kibira et al., 2015; Krueger et al., 2011; Pitorak et al., 2014).

Men's issues with contraceptive methods pertained to the dissatisfaction with condoms as it hindered their sexual pleasure, and the unacceptability of vasectomy as a contraceptive option due to it permanence and implications for men's perceived virility. In an editorial by Shelton and Jacobstein (2016), the low demand for vasectomies among men are explained by a number of reasons including fears and misconceptions about the procedure, and difficulties with internalising the idea that one's reproductive capacity is permanently terminated. Some men reiterated the negative side effects that their partners experienced, such as continuous bleeding and a loss of libido, citing the loss of productivity on the part of women's domestic chores and the inconveniences for men's own sexual pleasure when their partners had to manage these side effects.

8.2.2.3 Poor quality family planning service provision

The FGDs highlighted some of the constraints women faced with family planning service provision, ranging from a lack of trained service providers, negative provider attitudes towards family planning, and poor quality counselling and side effects management. These findings

align with previous work that has shown client satisfaction and the quality of service provision to vary greatly with differing levels of provider training and knowledge around contraceptive methods (Kibira et al., 2015; Orach et al., 2015; Pitorak et al., 2014). In many instances, providers' own misconceptions and beliefs about contraceptives, as well as a lack of skills to be able to administer long-term contraceptive methods have impacted women's contraceptive choices and use (Paul et al., 2016; Shumba et al., 2016). For women already challenged with returning to the clinic due to cost, distance, or partner opposition, negative provider attitudes and unskilled personnel added a further barrier to contraceptive use. Many women mentioned a distinct difference in the quality of care and satisfaction with services provided by VHTs in their community, compared with HCWs working at health centres. Most respondents felt that VHTs offered a more convenient and confidential option for obtaining contraceptive services, though their services were often restricted to counselling and providing methods such as condoms.

Men also attributed the occurrence of their partners' negative side effects to poor service provision. However, none of the men who were interviewed mentioned direct interaction with service providers themselves, indicating their lack of involvement with family planning service provision. It was uncertain if this was due to the perception that family planning programs were for women. Findings from the second quantitative study, however, showed a significant positive relationship between men's contraceptive use and discussion of family planning with a healthcare worker, an observation that has also been reported elsewhere (Assaf, 2019; Kabagenyi, Ndugga, et al., 2014). Men's low levels of interaction with family planning services could therefore be a possible contributor to the low contraceptive prevalence and high unmet need in the Busoga region.

8.2.2.4 Accessibility, affordability and availability of contraception

The affordability of family planning, in terms of the transport costs to clinics, and the costs of contraceptive methods were mentioned by several women. Though the majority of contraceptive methods were provided free of charge in public health facilities, costs were still incurred if specific methods were not available and women then needed to pay for additional transport to reach the next closest health centre. Costs were also incurred in some instances for long-term methods, referral processes, or if women needed to seek out contraceptives at a private clinic; as findings from the second quantitative study showed, a relatively high proportion of women (32.5%) accessed contraceptives in private clinics. Though the same study indicated that method-related costs were not a significant barrier to contraceptive use among women, this was still a pertinent issue for some women, yet one they were able to overcome in most instances without having to disrupt their contraceptive use.

As described in section 8.3.2.1, men too mentioned the costs incurred when their partner experienced side effects. Findings from the second quantitative study showed men's use of contraception to be associated with wealth status, but the nature of the DHS variables do not allow for a more nuanced understanding of whether men's concerns about contraception were related to their socio-economic standing (measured by wealth index). For example, it is not possible to ascertain if richer men were more likely to use contraception because they were able to afford the costs associated with side effects management.

Geographical accessibility for women was also a barrier. This was evident from both the second quantitative study, where distance to a clinic was a significant predictor of contraceptive use, and the FGDs, where several women mentioned clinics being very far. Finally, a lack of steady availability of certain contraceptive methods was a challenge for many women in instances when they invested time and to reach to a clinic, only to find that stocks of their contraceptive method had not been replenished. This often led to contraceptive discontinuation or method

switching, which for some women then became problematic due to subsequent side effects. These findings reiterate those of previous studies that geographical and financial access to family planning services, and method availability can be significant barriers to women's contraceptive use (Hyttel et al., 2012; Ouma et al., 2015; Tibaijuka et al., 2017).

8.2.2.5 Partner opposition and the stigma associated with contraceptive use

Many women, particularly older respondents, talked about the challenge of their partners' opposition to contraceptive use. This was further exacerbated by a lack of communication between partners about family size and spacing/limiting children, and assumptions were often made about a partner's fertility desires. Consequently, many women resorted to covert contraceptive use, which will be discussed further in section 8.3.2.7.

Reasons given by men for their opposition to contraceptive use included wanting more children and fears of side effects. Some men also associated contraceptive use among women with prostitution and infidelity, particularly if women initiated contraceptive use on their own, as this went against the gendered expectations of women in a relationship. The implications of this stigma for women was damaging in terms of seeking out and using contraception. As women mostly resorted to covert contraceptive use in such situations, the risks and consequences of being discovered were also far greater if their partner attributed contraceptive use to infidelity, and could include violence, abandonment or being cast out of the home. A paradoxical situation therefore exists between women's inability to negotiate contraceptive use (due to women's subordinate status in a relationship) and therefore resorting to covert use, yet as contraceptive use was stigmatised as a sign of infidelity, this constrained women further in being able to discuss their contraceptive needs.

It was noteworthy, however, that several younger women reported having supportive male partners who enabled their contraceptive use. Similarly, some men were in favour of contraceptive use, particularly because of the benefits of better managing their families financially, which then enabled them to successfully fulfil their breadwinner role. Such shifts in attitudes towards contraceptive use are promising; together with men's continued experience of the benefits of contraceptive use, this may signal a possible future where such views become the norm.

8.2.2.6 Socio-cultural norms, polygyny and religion challenge contraceptive use

Men's status being linked to a large family was a socio-cultural norm that many women and some men identified as a hindrance to contraceptive use. Conventionally, women's subordinate status in a relationship allowed them no room to voice or negotiate their own fertility desires. As a result, many women were pressured to 'produce' as many children as their partners desired, though most women wanted fewer children than their partners did. These discordant fertility desires coupled with a lack of spousal communication about family size and child spacing/limiting were a further barrier to contraceptive use and another motivator for women's covert contraceptive use.

Previous literature on women in a polygamous union has shown that competition among co-wives for attention and resources shifts the focus away from contraceptive use to childbearing instead, as co-wives who produce more children are usually favoured by their partner (Heck et al., 2018; Kabagenyi et al., 2016). In this study, however, women who were co-wives still actively sought out contraception. This could point to women's increasing sense of self-reliance and autonomy when it came to decisions about their own reproductive health. These women may have chosen to exert their own agency in fertility choices due to more challenging

economic situations, despite the implications this may have in terms of their partner's affection and support. It could also be because men were unable to financially support their children and many wives, leading women to take on more responsibility for managing the size of the family.

Religious views about family planning, particularly among Muslims and Catholics, were also a barrier mentioned by some respondents, which aligns with previous work (see Kabagenyi et al., 2016; Nalwadda et al., 2010; Orach et al., 2015). Though a few Muslim respondents said they adhered to the religious stand against contraceptive use, most others said they disobeyed this rule because of the burden that came with caring for a large family. Most women and some men justified contraceptive use based on the idea that 'God would understand' the financial hardships that came with having many children. Though religious influences and beliefs were deemed important at a societal level, religious doctrines were less binding at the individual level, and were adjusted according to one's ability to manage his or her family. This was also evident in the second quantitative study, where no difference was seen in contraceptive use among different religious groups.

The section above illustrates the different motivations for contraceptive use or non-use, as well as the barriers faced by respondents in this study. These were often a result of a combination of individual, familial and societal influences. Despite some men being open to contraceptive use and some men using condoms, women remained the primary users of contraception. While there is a definitive demand and a need for contraception, this need was not always met due to one or several of the above barriers.

In the social context of the communities women lived in, gender norms and patriarchal practices also played a large role in determining women's agency and autonomy when it came to contraceptive decisions and uptake. Yet despite the numerous barriers described above, many women still resolutely sought out contraception. They found ways and means to tackle

the different challenges presented through covert contraceptive use, method switching and seeking out alternative sources of contraception, as some of the examples cited. The next section takes a closer look at the intricacies between male opposition to contraception, and how women navigated this through covert contraceptive use.

8.2.2.7 Covert contraceptive use: male opposition, or a lack of communication?

Many older women explained that discussions about family size and fertility regulation were not a possibility for them. Culturally, it was not common practice for partners to talk about such matters, and women's subordinate status within a relationship did not allow for them to initiate such conversations. As a solution to this, covert contraceptive use was openly discussed in the FGDs. For many women, this was a way around their partners' opposition to contraceptive use, and a means of exerting some control over their own fertility and managing the size of their family. They understood the serious consequences they would face if they were discovered by their partners, yet were willing to jeopardize these as the benefits of child spacing or limiting outweighed the risks for them. As described in earlier sections of this thesis, it was unclear whether partner opposition to contraceptive use had been explicitly articulated, or if this was an assumption on the part of the women.

Similarly, men explained that their opposition to contraceptive use was due to desiring more children, fearing negative side effects, and believing that women who used contraceptives were being unfaithful. Whether these reasons were communicated or discussed with their partners was again unclear; however, men considered their decision on the matter to be final, and that these decisions would be respected unquestioningly. In the absence of spousal communication, women then assumed their partners wanted more children, while men expected women to comply with their wishes and dutifully fulfil their childbearing role. Hence discordant fertility

desires were not discussed, and the timing and spacing of pregnancies were rarely planned. Where covert contraceptive use was concerned, men's harsh and retaliatory reactions were because they perceived such actions by women to be a direct disobedience of their wishes, which was unacceptable within the gendered norms and expectations of a relationship. Covert contraceptive use was also strongly associated with infidelity and prostitution. Men's perceived incriminations of this – as a way in which their partners could be unfaithful – further exacerbated men's anger and vehemence toward covert contraceptive use.

Figure 8.1 provides a schematic of the complex, interlinked drivers of men's opposition to contraception and women's resulting covert contraceptive use. A lack of spousal communication, the association of contraceptive use with infidelity, discordant fertility desires and men's status – defined by the size of his family – are critical factors that link the two themes. Pink arrows depict relationships that specifically affect women, blue arrows indicate those for men and black arrows signify those that affect both women and men.

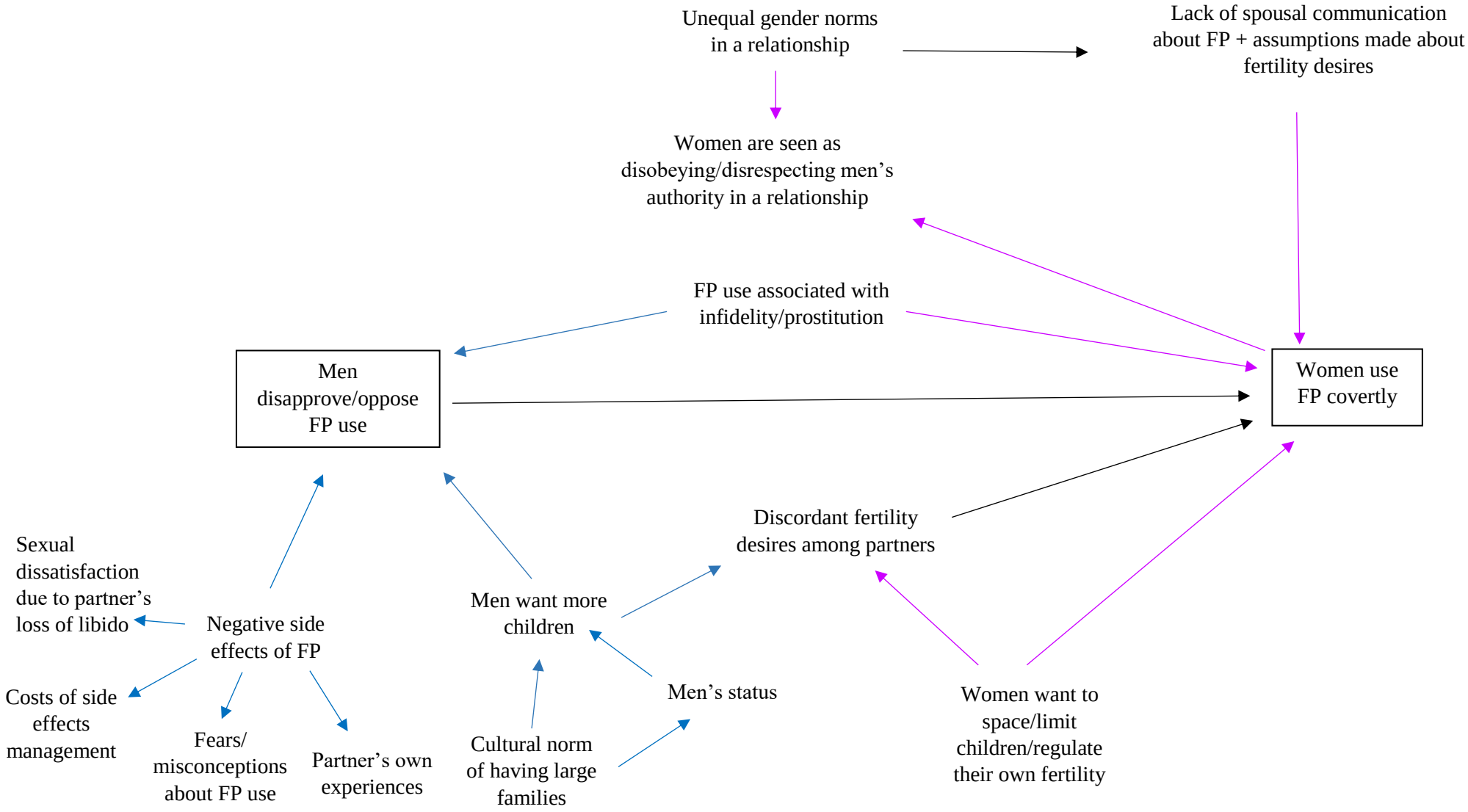

Figure 8.1. Schematic of factors contributing to men's opposition to contraception and women's covert contraceptive use.

8.3 PATRIARCHY, GENDER NORMS AND MEN'S INVOLVEMENT IN FAMILY PLANNING

The qualitative findings clearly indicate that distinct gender and socio-cultural norms dictate the roles and expectations of women and men within relationships, family and society. Uganda is largely a patriarchal society with many entrenched, traditional attitudes and practices that consider men to be superior and more powerful. This includes men's roles as the primary provider and head of the household. Men's sense of identity, masculinity and status were very much tied to their ability to have 'enough' children and provide for their family. Nonetheless the views of respondents in this study were not completely homogenous; there were varying opinions the ideal family size among women and men as well as different ideas around what male involvement in reproductive health entailed.

The following section begins with a closer look at the 'male breadwinner/female homemaker' model of family in Ugandan society that reinforces notions of dominant masculinity, through the distinct roles and expectations of women and men. To better deconstruct the nuances of patriarchy, gender norms, women's and men's roles and how these collectively impact contraceptive use, I then draw on Connell's (1995) concept of hegemonic masculinity and re-propose the idea of men as 'gatekeepers' of women's reproductive health and choices. Based on work by Silberschmidt (2005) and Wyrod (2008) on shifting notions of masculinity in changing social and economic contexts, I offer an explanation for some of the more progressive attitudes among some men in this study. Finally, using the constructive male engagement framework, I make a case for focusing future efforts on men's acceptance of contraception as a mainstay of increasing men's involvement in family planning, together with an impetus for spousal communication and joint-decision making,

8.3.1 The enduring 'male breadwinner/female home maker' model in Ugandan society

The nuclear family model centred on men as breadwinners and women as homemakers in most Western societies dates back to the 1940s and 50s (Davis, 2013). Sociologists Parsons and Bales had, at the time, put forward a theory that families, as small groups (with between two to three children), did better if members had specific roles and activities assigned to them; men, for instance, were deemed task leaders and women were given the role of social-emotional leaders (Parsons & Bales, 1955). Societal, political and economic factors in many countries at the time supported this family model, advocating for the division of labour by gender as the most 'rational and efficient', and thereby ensuring marriage quality and stability (Cherlin, 2010; Yu, 2015, p. 36). Though there is a scarcity of literature around the development and adaptation of this family model in African contexts, Silberschmidt (2005) highlights the existence of the 'male breadwinner/female homemaker' family model in east Africa as early as the 1940s. She describes the dependence of a family on men's financial contributions, with men occupying the role of head of the household, while women were more the 'daily managers' of the home, though also responsible for work on the farms (Silberschmidt, 2005).

Many Western societies have gone through several transitions since the 1950s, both in terms of family models and the gendered division of labour within families. Many of these transitions were economically driven, requiring two incomes in a family and thereby increasing women's participation in the labour force. In the African continent, events such as the HIV/AIDs epidemic, conflicts, wars, famine and migration have changed family structures and altered fertility rates, and tensions between traditional values and modern ways of life have resulted in differing outcomes in different country contexts (Bigombe & Khadiagala, 2004). Increasing economic constraints have also had a part to play, as mentioned by some respondents in this study, and more women have been tasked with income-generation roles in addition to their expected domestic and childbearing roles. Despite these changes, the ideology of the 'male

breadwinner/female homemaker' family model persists in many African countries, including Uganda, as evidenced from findings in this study. The continuation of these gendered roles was reflected strongly in both women's and men's comments in the FGDs and interviews respectively. In interviews with men, it was apparent that a large part of men's identity and status were tied to fulfilling their roles as breadwinners, which were, in part, made possible by women fulfilling their own roles around childbearing and caring for the family. The persistence of this family model therefore reinforces the existing notions of masculinity and gendered norms that dictate the roles and expectations of women and men in Ugandan family and society.

8.3.2 Hegemonic masculinity enables men to be 'gatekeepers'

Connell's concept of hegemonic masculinity dates back to the early 1980s, when it was first used as a basis to understand and explain the dynamics of masculinities in the context of gender, privilege and power structures (Connell & Messerschmidt, 2005). Hegemonic masculinity is defined in the literature as "a set of values established by men in power that functions to include and exclude, and to organize society in gender unequal ways. It combines several features: a hierarchy of masculinities, differential access among men to power (over women and other men), and the interplay between men's identity, men's ideals, interactions, power, and patriarchy" (Jewkes et al., 2015, p. S113). This position of male dominance is posited to be attained through 'relative consensus rather than regular force', the consensus being driven by both benefactors in this position (men) and those in a state of oppression (women) (Jewkes et al., 2015, p. S113). Connell refers to this concept as the 'patriarchal dividend' recognising that there is a choice for both men and women to occupy these relative positions, even if that choice is highly controlled or constrained. She also recognises that ideas and roles around gender operate in social groups, and in order to instigate a change in the ways these gender roles are

practiced and propagated, a change of ideals and attitudes is required at the societal level. Hegemonic masculinity has also been recognised to affect health-seeking behaviour, particularly where the notion of masculinity is perceived by men as being physically, mentally and emotionally stronger, and therefore being less in need of medical attention (Noone & Stephens, 2008).

It was clear in this study that men occupy a dominant and distinctly higher status in relation to women in Uganda society. This hierarchy occurs at an individual, familial and societal level, and is accompanied by associated power and gender inequalities in terms of men's and women's roles in their relationships, families, and communities. The notion of hegemonic masculinity and gendered power imbalances plays out in the way men are seen as the main decision-maker in families, and that their role and authority is to be unquestioningly respected by women. Men were also recognised as the primary breadwinners in the family, a role that was privileged over the more domestic and child-rearing duties of a woman, despite women's duties often being more laborious and numerous. In instances where women were expected to assist in the economic support of the family – through farming, engaging in manual labour (such as digging in agricultural fields) or selling agricultural products at the market – these 'subsidiary' breadwinner tasks were not given the same recognition as those of men.

Silberschmidt (2005) argues for a shift in the way men's status, roles and masculinities play out in times of socioeconomic change. For instance, inherent to their role as head of the household is the expectation that men would provide money for food, education, clothes and other necessities for his family. As a patriarch, men thereby have certain roles and responsibilities expected of them, in addition to the privileges and double standards they enjoy; by fulfilling these roles, men gain social value and respect in their communities. Silberschmidt points out that since women have had to take on an increasing share of the provider role in recent decades, men's status as breadwinners have come under scrutiny, and men's roles as

heads of the household have perhaps shifted more towards being 'figure heads' of the household (described in section 7.3). Traditional patriarchal practices that advocate for the domination of men and subordination of women could therefore shift with women's new roles as financial supporters of the family. Since men's authority and self-esteem are consequently threatened, a way of reinforcing their power and authority in a relationship and family could be through violence and other acts of domination.

Where family size is concerned, an excerpt from Silberschmidt's paper describes that "a man needs at least three wives: one to bear his children, one to work and one for pleasure" (Silberschmidt, 2005, p. 193). Men's masculinity, status and authority are measured by their ability to support multiple wives (particularly among wealthy men through the payment of bride price) as well as through their virility in bearing many children, often with multiple women. Yet whether they are able to support these children is a secondary measure. The inability of a man to produce children is often equated with the notion that they are not 'real' men. A man's identity, self-confidence and social standing are hence linked to his sexual prowess. Many men consequently have casual partners or relationships outside their marriage in order to reinforce their identity as a man; as quoted in Silberschmidt's article, "a man needs to go outside to feel like a man. Wives always complain. To get affection he has to go to his outside partner" (p. 193). She posits that men's needs for extra-marital relationships are often driven by a sense of lost control over their own household. For many men, casual partners were a way of asserting their dominance, reclaiming their sense of being a man, being comforted, and a way of dealing with feelings of inadequacy. Supported by patriarchal norms that associate positive connotations to men's prowess through having multiple partners, this allows men to enhance their masculinity, self-esteem and identity, as well as re-assert a sense of control over women.

Ideologies around masculinity are also closely related to men's sexuality. From this study it was apparent that a man's sexual pleasure was given more precedence than a woman's; this was evident in instances where the use of condoms as a contraceptive method hampered men's sexual pleasure, for example. For this reason, if contraceptive use was an option, men preferred female-centric methods. Side effects such as continuous bleeding or loss of libido also interfered with men's sexual pleasure, and became a problem as women were expected to satisfy their partner sexually, though the same was not expected of men. Failing to pleasure her husband has dire consequences for women, and it was acceptable for men to separate from, abandon or divorce their current wives and find another partner in such situations. Furthermore, men's fertility desires and preference for large families often superseded that of women who, in their childbearing role, were expected to provide as many children as their partners wanted. However, the care of these children fell under the purview of women. Women were also expected to seek their partner's opinion and permission for reproductive health matters, and then comply with the decisions made by their partners; women were not expected to initiate contraceptive use on their own, and most definitely not allowed to use contraceptives secretly. In instances of polygyny co-wives were further unable to negotiate for or discuss their own fertility desires, for fear that they will then be less favoured in relation to another wife.

The culmination of all these factors effectively enable men to become the 'gatekeepers' of women's fertility and reproductive health choices and actions. That men are often primary decision-makers with more power in relationships and therefore gatekeepers has previously been discussed by Connell (2005) and Greene (2006) in the context of gender equality and male involvement in reproductive health, respectively. Connell discusses men's gatekeeper role in the broader context of advancing gender equality, stressing that men's degree of control and power over women hinders progress towards complete equality. In Greene's constructive male engagement framework, described in more detail in section 8.4.3, she suggests that men's

status as gatekeepers should be acknowledged in efforts to involve men as partners in reproductive health, in contraceptive decisions and uptake. In patriarchal contexts that allow men's authority over women in a relationship, home, and community, and where masculine identity is tied to notions of power and status, the persistence of attitudes and practices in line with these ideologies only work to reinforce these distinctly gendered roles.

To summarize the above concepts, Figure 8.2 was adapted from Scott-Samuel's (2009) paper on patriarchy, masculinities and health inequalities, and depicts the interplay of hegemonic masculinities on gender, power and health inequalities in a patriarchal setting. The figure shows how a patriarchal society further enforces these values.

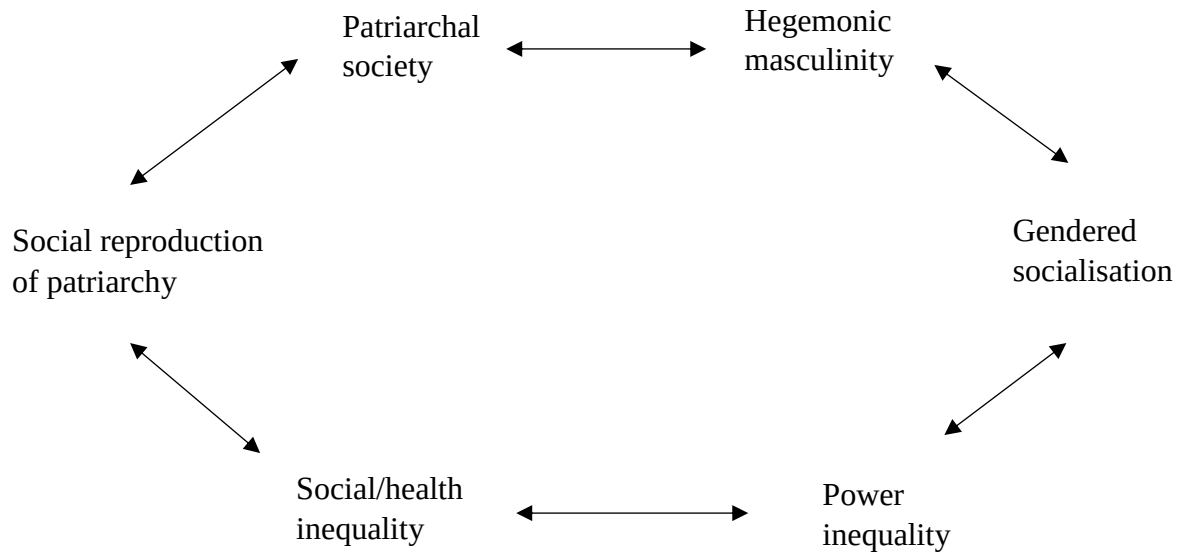

Figure 8.2. The interplay between hegemonic masculinity and inequalities in a patriarchal setting.

8.3.3 Shifting norms and notions around masculinity

A few more 'progressive' men have started questioning traditional masculinist ideals, especially when they feel these are not aligned with their best interests. This shift in mind set is also rooted in questioning existing norms and stereotypes that portray men as dominant and women as subordinate. In this study, a minority of men were inclined to move away from traditional gender norms and lean more towards increased equality between women and men in a marriage. These men also talked about the quality of family life, rather than just the quantity of children in a family. This was particularly in relation to the challenges of fulfilling their breadwinner role when they had a large family to support, which in turn threatened their identity, masculinity and social status.

Wyrod's (2008) ethnographic study on the women's rights movement in Uganda argues for three distinct positions in regard to gender relations and the equality of women and men in society. He describes *reactionary responses* that lean towards maintaining patriarchal relations of men being superior to women; *mainstream responses* that seek to find a balance between men's role as the main provider and authority in the home and recognising the status and rights of women; and *transgressive responses*, which challenge the concept of hegemonic masculinity and allow for more gender equality. In a similar study by Morrell (2001) in South Africa, three broad categories of men's views about gender equality were identified: reactive or defensive of their status, accommodating, and responsive towards women, or progressive. Arguably, similar views were seen among men in this study. The majority of respondents were of the view that women and men had distinct roles in family and society, and that men, as the head of the household, were of a higher status than women. Men's opinions and decisions therefore were to be respected as the final authority, even where women's reproductive health choices were concerned. A few more liberal men, however, were in favour of discussions and joint-decision making around family planning, and acknowledged a woman's voice in a relationship.

This shift from traditional, patriarchal attitudes towards more liberal, egalitarian views on gender norms and roles among these respondents were also apparent in that some men were more receptive to contraceptive use, and hence their partners were able to initiate a discussion on family planning. That several respondents considered educated people to be users of family planning could perhaps point to education as key in the emergence of more equitable views about women's and men's roles in family and society (Kraft et al., 2014). While a large evidence base has established women's education as a critical factor in contraceptive use (Agyei et al., 1995; Ouma et al., 2015), men's education was also identified as a significant predictor of contraceptive use in this study. This is a paramount consideration in the context of Uganda's largely patriarchal society, and provides evidence for further efforts and policy advocating for men's increased education, particularly around gender equality and health.

The changes observed in this study may indicate a broader evolution of the concept of hegemonic masculinity to one that is less patriarchal and hierarchical in terms of male dominance and power, particularly among younger, educated women and men. Nonetheless, it is just as critical to realise that such changes can only go so far if societal attitudes and practices remain patriarchal and ingrained in traditional norms that favour male authority and superiority. As Wyrod (2008) points out in his paper, it is important to consider the cultural context of such norms. Traditionally, systems of clans and kinship have been hierarchical in structure, with a king or ruler at the apex of the hierarchy demanding a sense of allegiance from their subordinates. Wyrod argues that this model of power still allows for independence and autonomy, but within a more structured, societal system, which is very different from Western ideas of intrinsic freedom and individual rights. An appreciation of such systems of structure and power are important in recognising and understanding the norms that govern relationships and dictate roles and expectations of women and men in Ugandan society.

8.3.4 The constructive male engagement framework

In recognising the ambiguity of the term 'male involvement', Greene's Constructive Male Engagement Framework has attempted to categorise men's involvement in family planning and reproductive health at three distinct levels. These recognise men as *clients*, with contraceptive needs of their own and possibly using male-centric contraceptive methods (condoms and vasectomy); men as *partners*, who are actively involved in decisions around fertility regulation and contraceptive method choice (and supporting their partner's use of contraception should they choose a female-centric method); and men as *agents of change*, who are proponents of gender equality and are actively involved in changing underlying norms, attitudes and practices that are harmful or discriminatory against women (Greene et al., 2006). Greene's framework provides intermediary steps to progress from a focus on men's needs as clients (which still allow for men's dominance in decisions about fertility regulation), to a focus on men's ability, as partners, to enable women's contraceptive choices and behaviour. The framework posits the optimal level of male involvement to be men as agents of change, transforming gender and socio-cultural norms that constrain women's reproductive health choices and actions (Adamou, Iskarpatyoti, Agala, & Mejia, 2017).

Traditionally, most family planning programs and efforts have targeted and focused exclusively on women. As mentioned in several sections of this thesis, while marginalising men and minimising their participation, this approach has also reinforced the idea that fertility regulation is the role of women, though men mostly decide how and when this is done. This continued and gendered division of roles in reproductive health has resulted in slow progress addressing traditional views of men as the final authority in relationships. Nonetheless, efforts to shift the focus of family planning programs to include men as both clients and partners have increased and gained momentum in the last decade. Based on the positive associations of contraceptive use with increased couple communication (Bawah, 2002; Ghanotakis et al.,

2016; Stern et al., 2015; Wegs et al., 2016), efforts to improve male participation may be more effective if focused on the idea of men as partners, harnessing men's decision-making power more effectively towards enabling women's contraceptive use. While being agents of change and actively transforming gender norms may be a long way off for many men, changes in men's attitudes towards contraception, communication and joint decision-making among couples could be a more feasible, short-term goal to increase men's involvement in reproductive health.

8.3.5 Male involvement in family planning? Or merely male acceptance?

Within the context of the IMB framework (described in section 3.6.1.2), men in this study had sufficient information about family planning methods; both the quantitative and qualitative studies found men's awareness of contraception to be notably high, though there still existed misconceptions and fears around contraceptive side effects. Where behavioural skills were concerned, the majority of men had used condoms at some point in their life, and some men were condom users at the time of the study. Men's motivation to use a male contraceptive method was less compelling. Male contraceptive methods did not personally or socially appeal to men – condom use was associated with reduced sexual pleasure and casual relationships outside marriage, and the permanence and implications of vasectomy were unacceptable.

Men's main motivation for engaging in family planning was to lessen the financial burden that resulted from having large, poorly-spaced families. Men were also concerned with their family's wellbeing, particularly their children's health and education, as children were an extension of their lineage and a contributing factor to a man's status in society. For this reason, the largely held belief among women was that their partner wanted more children (while women necessarily did not). Yet, cultural and communication constraints rendered discussions

of family size and child spacing (and limiting) nearly impossible for women, so they often made assumptions about their partner's wishes.

Despite the numerous barriers to contraceptive use that women raised in this study, it was clear that as long-standing *implementers* of family planning decisions, women were well equipped and resourceful in seeking out and using contraception for themselves, whether this was done with their partners' approval or covertly. The availability of a larger range of female-centric methods facilitated this, and mechanisms for their access to contraceptive services, whether it be through VHTs or regular visits to the clinic (for their children's immunization, for example) were already in place. The integration of family planning services with child immunization initiatives is common for this reason in Uganda (Figure 8.3a-b), and has shown success in Rwanda as well (Dulli, Eichleay, Rademacher, Sortijas, & Nsengiyumva, 2016). Many of the VHTs and healthcare providers were aware that women were using contraceptives covertly and maintained a sense of privacy and confidentiality for their clients. Therefore women had already established ways to access contraception despite the constraints and challenges they faced. These barriers did not make contraceptive access any easier, but it did not necessarily impede women's demand and use of contraception either. Furthermore, as studies in Ghana and Tanzania have shown, it is possible that most women, in accepting the contraceptive burden for themselves, did not wish men to be involved, as this infringed on the few 'women only' spaces that had developed as a result of these gendered roles (Ganle, Dery, Manu, & Obeng, 2016; Msoka et al., 2019).


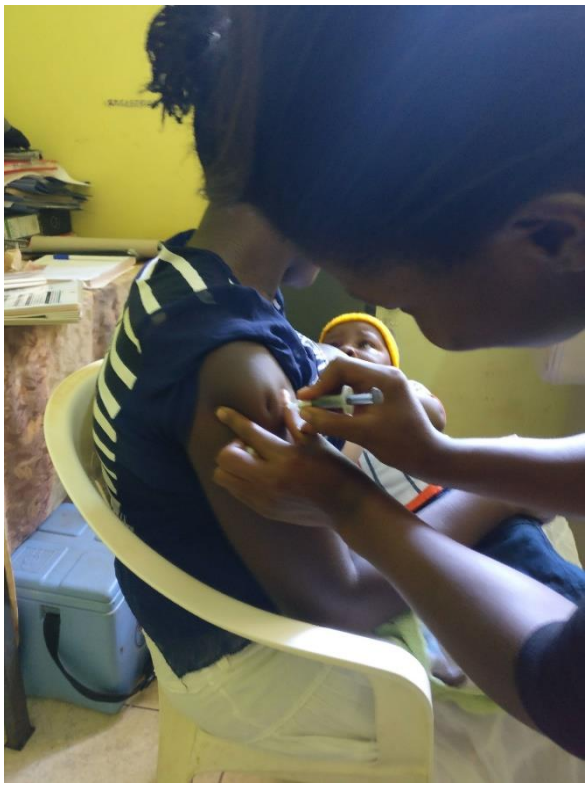

Figure 8.3a-b. Women receiving family planning counselling and contraceptive injections during routine immunization for their children.

This begs the question of whether increased male involvement in family planning is actually effective. It was clear from the FGDs and interviews that men held a great deal of decision-making power, but they did not regard this as a way of being involved in family planning. Instead, they considered it as the status quo for men's place in a family and society. Though men's interactions with a healthcare provider were positively associated with contraceptive use in the quantitative study, it is likely that men who met with healthcare providers were already more involved with the healthcare needs of their partner and family. Therefore a stronger focus on male approval of contraceptive use, rather than increasing men's involvement as clients, may be a more pertinent objective for family planning and reproductive health programs going forward. Evidence for this also comes from a mixed-methods study in Kenya which implemented and evaluated a community-level intervention to increase male involvement

through community dialogues. The study found that male approval of family planning was an important precursor and predictor for contraceptive use among women (Wegs et al., 2016). Past male motivation campaigns across a variety of contexts have also suggested that men's support of their partner's contraceptive use, as opposed to direct action, to be more effective (Kim & Arangwanda, 1997). As evident in this study, most men were not in favour of the male contraceptive methods available to them, and family planning efforts that have focused on men as clients seem to have reached a threshold, save for the continual efforts around increasing knowledge of contraceptive methods, while dispelling misconceptions around contraceptive use. Increasing men's approval of family planning may also be a gateway to men's increased involvement with contraception, particularly through encouraging spousal communication and joint-decision making on matters of fertility, family size and reproductive health.

8.3.6 A case for better spousal communication and discussions around family planning

The mixed methods study in Kenya which sought to increase male involvement through community dialogues, echoes findings of other interventions that have shown strong positive associations of spousal communication and joint decision-making with contraceptive use (Bawah, 2002; Ghanotakis et al., 2016; Stern et al., 2015; Wegs et al., 2016). It was evident in this study that discussions about contraception were not a possibility for many women who spoke at length about partner opposition to contraceptive use. Yet as mentioned in section 8.3.2.7, it was uncertain if this was an assumption on their part as the subject had never actually been broached; this is a commonly reported consequence of a lack of spousal communication (Bietsch, 2015). However, younger women spoke more positively about their ability to initiate and discuss contraceptive use with their partners, which may indicate an increase in the openness of younger people in Uganda to talk about family planning and reproductive health

within spousal relationships. Similarly, some male interviewees spoke about joint contraceptive decision-making and that it was important ‘we sit down and discuss’ to agree on a contraceptive method. It is impossible to gauge whether these discussions were a two-way conversation where a woman’s opinion could be acknowledged, or a one-way discussion where the man voiced his opinion and expected his partner to comply with his wishes. However, the fact that some men were open to the idea of a discussion is a valuable starting point. Interventions aimed at improving communication and joint decision-making within spousal relationships may, over time, enable a normative change, where men are more open to conversations about family planning, and women feel safe and able to discuss contraceptive use with their partner. Such changes, however, can only be sustained and normalized in the larger context of societal-level shifts in attitudes and norms toward contraceptive use and behaviour.

8.4 STRENGTHS AND LIMITATIONS

One of the key strengths of the mixed methods approach in this study was the possibility of a country-level analysis of contraceptive use over 21 years through representative quantitative data, but also to listen to participants’ voices through the use of qualitative data. The explanatory sequential mixed methods approach provided a holistic and comprehensive yet contextual understanding of contraceptive use and unmet need. This was achieved through different but complementary sources of data, which helped to more effectively address the research questions in this study. The following sections will detail the strengths and limitations of the two different phases of data collection and analysis.

8.4.1 Quantitative phase

The utilization of DHS data from large, nationally representative datasets based on systematic survey methodology together with high participant response rates, lent robustness to the results of the two quantitative studies. Additionally, the repeated, cross-sectional study design of the DHS were based on variables that were consistently measured using the same questionnaires and sampling techniques across the study period (1995-2016). In both publications that formed the basis of the quantitative chapters in this study, a Ugandan researcher was purposefully involved for the cultural and contextual interpretation of the results.

The first quantitative study was novel in following the changes in contraceptive use among women and men for purposefully selected variables. This allowed the impact of initiatives across time to be assessed, which could inform health policy decision-makers about groups at high risk of not using contraception. The second quantitative study of women and men's use of modern contraception in Uganda was based on the most recently available, nationally representative data from 2016, and therefore is the most updated and accurate reflection of current contraceptive use in the country. Another strength of both studies was the use of national data in the investigation of contraceptive use among men, who have been a largely understudied population; both quantitative studies provided an analysis of men's contraceptive use and predictors of men's contraceptive behaviour in Uganda.

While the studies in this phase have salient strengths, they also have weaknesses. Both quantitative analyses were based on secondary data that were collected through DHS survey methodology and sampling, and therefore constrained by the variables collected and their respective definitions. Thus there was no control over how or where data was collected from, or the way questions were structured to obtain information on the different indicators of maternal and reproductive health in the survey. Data collected for all the DHS variables were also self-reported, hence subject to recall bias and response bias, and the psychometric

properties of the tools were not readily available. It must also be emphasised that the results presented in the first study can only be applied to the study period between 1995 and 2016. Contraceptive usage rates cannot be extrapolated to years outside this study period as it is unlikely that the estimated non-linear patterns of increased contraceptive use will continue beyond this timeframe. In the second study, the ROC curves yielded less than adequate predictive power in the men's model, which could suggest that the reliability of some self-reported variables may be relative weak for men compared with women. Further work is needed to examine other factors that have not been considered in this study, such as decision-making dynamics, partner characteristics, the desire for more children, and the reliability of self-reporting among men. The relevance and applicability of the country-level findings to the Busoga and other specific regions in Uganda must also be approached with caution, as the 2016 DHS dataset was based on a nationally-representative sample of women and men across all regions of Uganda.

8.4.2 Qualitative phase

The reliance on FGDs and in-depth interviews in the qualitative phase of this project offered rich, personal data around attitudes, knowledge and experiences with contraception. First-hand accounts and experiences about contraceptive use were provided by both women and men from the Busoga region, which was the geographical area of interest in this project due to its low contraceptive prevalence and high unmet need. Therefore, the data gathered may have exemplified specific ethnic, tribal or geographical influences on contraceptive use, though these factors were not specifically questioned or raised in FGDs or interviews. The use of FGDs with women, in particular, was useful for elucidating the social attitudes and collective, shared knowledge about contraception, as well as understanding the importance of informal networks

among women when it came to exchanging information and seeking reassurance about reproductive health matters and contraceptive decisions. The question schedule for men's interviews were informed and shaped by findings form the women's FGDs and key informant interviews with service providers, and the topics discussed were more streamlined to elucidate men's views and experiences with contraceptive use. Thematic saturation was also achieved in both qualitative phases of the study. Once no new themes were identified in both FGDs and interviews, data collection was stopped and an inductive thematic analysis was undertaken to identify latent themes and patterns across the data.

Nonetheless, the qualitative phase is not without its limitations. As all FGDs and the majority of in-depth interviews were conducted in Lusoga, which was the local dialect in the Busoga region, some of the nuances, jargon and cultural ways of describing or thinking about certain topics or issues may have been 'lost in translation' in the process of transcription and translation by the local Ugandan research team. Though participants were requested to maintain discretion and confidentiality about the topics discussed in the FGDs, as a researcher I had no control over whether participants actually adhered to this once they left the FGD. The presence of staff from the local partner NGOs and my role as a foreign female researcher, particularly when conducting interviews with men, may also have influenced responses in terms of honesty and participant bias. Relatedly, my interpretation of certain cultural references or practices may have lacked the specific contextual understanding that a Ugandan researcher might have had. However, in order to mitigate this, all local and cultural references in the transcripts were cross-checked and discussed with the Ugandan research team.

A limitation of the thematic analysis approach was that linguistic nuances in the ways respondents described or talked about certain topics were not given due attention; a discourse or narrative analysis may have better captured these elements of the data. Interviews with men and FGDs with women were also done in two different phases of data collection, and therefore

it was not possible to compare accounts or experiences from women and men who were part of the same couple, to get a sense of the relationship dynamics of couples.

8.5 REFLECTIONS ON MY JOURNEY AS A RESEARCHER

In my position statement, outlined in section 3.8, I described my personal motivation for undertaking this study, the series of events that led to this research topic of contraceptive use, and why it was situated in the context of Uganda. At this juncture, I would like to reflect on the journey this study has taken me on, the aspects of the research that changed along the way, and what I have learned as a result.

My initial project plan was to research and implement an evidence-based intervention to improve family planning efforts in the Busoga region. While my supervisors cautioned me about the time constraints of such an endeavour, it was only after my first field trip in December 2017 that I realised the impracticality of this idea. The feasibility of designing and funding an intervention, which could also align with a local partner organization's program goals, was not achievable in the span of three years. However, the first wave of qualitative data identified an opportunity to further examine men's perspectives on family planning; men's voices have not been widely heard in research about contraceptive use, gender norms and expectations, particularly within a patriarchal context. This led to a refocussing of the research plan and a second field trip in November 2018, this time to conduct in-depth interviews with men; a qualitative research undertaking that was novel and exciting for me, but not without a sense of trepidation. Looking back, I believe this change in course led to a more fulfilling experience and outcome in terms of the research.

It was important to recognise my positionality, as a female researcher from the 'West', in analysing the data about men, gender and some of the patriarchal norms that participants

alluded to. Living with a Ugandan family in Iganga and spending a lot of time with the local research team during my field work gave me a sense of how gender roles were understood, accepted and actioned, and these learnings lent perspective and context to the thematic analysis. While some of the norms and comments around male dominance and women's insubordination were difficult for me to comprehend and accept, I tried to reserve judgement against individuals and instead relied on the feminist perspective as a theoretical lens for my understanding of beliefs and attitudes from a societal standpoint. I also remained mindful of my *etic* perspective as a cultural outsider in the Ugandan study context.

A primary aim of this thesis was the contribution of my research findings towards improving family planning programs and service provision in the region. This has continued as a strong focus for extending the recommendations of this study, and explains the predominant focus on program interventions in the discussion of the findings. However, I feel it is also important to acknowledge the implications of this research around broader issues of men's education, general accessibility of health services, and advocacy for gender equality. In the course of the discussion, I therefore emphasize that progress is bounded by the larger societal system in which it is situated, and for this reason, social change through population and policy interventions at the community and country-level is imperative for long-term, sustainable improvements in family planning and reproductive health.

One of the more personal lessons I have learnt from this PhD undertaking has been about relinquishing the need for control, as a researcher. During my time in Iganga, a lot of what was happening – participant recruitment, time schedules for interviews, the availability of transport for travelling to more rural locations – was not within my control. I had to learn to trust my research team, and surrender to the local ways of knowing and doing things. It was a lesson in patience and adaptability, and one that I am very thankful for. In hindsight, taking the time and

waiting for the natural order of things to unfold contributed to the richness and depth of the fieldwork, both in terms of the data gathered and my growth and experience as a researcher.

As a final note, I must say that I was humbled by the resilience and strength of the women in Iganga. They seemed to share a quiet understanding and acceptance of their lives as women, particularly when it came to marriage and family, and though many of them bore the weight of the world on their shoulders, they did so smiling, with poise and tenacity. Many of my days were spent sitting outside in the yard with them, while the electricity was out and they washed clothes or cooked for the family over a charcoal fire. During those evenings, they taught me so much about staying positive and hopeful in adverse, challenging situations. Their wit and wise words about living a full life and choosing to be happy in the midst of struggle conveyed a profound sense of shared humanity among all of us, despite our differences and the inequalities they had faced in their lives.

9 CONCLUSIONS AND RECOMMENDATIONS

This mixed methods study in Uganda sought to quantify and understand unmet need for contraception, and propose strategies to improve contraceptive use among women of reproductive age. The quantitative phase of the study first examined national-level changes in contraceptive use over time, and identified current predictors of contraceptive use among women and men. The qualitative phase then explored contextual factors and barriers that determined contraceptive use in the Busoga region of east Uganda, with the goal of providing recommendations to address unmet need and improve contraceptive uptake in this region.

The analysis of Uganda's DHS survey data across 21 years (1995-2016) indicated an increase in contraceptive use over time, among both women and men. Also important to acknowledge is the steeper rate of increase in contraceptive use among certain sub-populations, such women who are less educated, those living in rural areas, and men. These changes reflect a culmination of program and policy successes over the last two decades, particularly in reaching groups that are often more in need of services, yet have difficulty accessing these.

This study also identified predictors of contraceptive use among women to be education, parity, marital status, wealth index, region of residence and distance to healthcare services, while for men, education, number of children, wealth index, hearing about family planning through the media and discussions about family planning with a health worker were significant. The 2016 data analysis also identified important population groups such as those less educated, of lower socioeconomic status and those who reside in areas outside the Central region, who may still find access and uptake of modern contraception to be a challenge. Taken together, these findings point to several key implications for family planning strategies in Uganda at both the program and policy levels. Though the goals of Uganda's FP-CIP are formulated at a national level, these findings are important for informing health policy and program directions,

particularly for meeting the needs of sub-populations with unmet need and at high risk of not using contraception. These findings are also of value for streamlining future family planning initiatives, particularly for targeting population groups that would benefit from more focused efforts around service outreach and provision. Reaching these populations are particularly critical if unmet need is to be reduced and the national goals of Uganda's FP-CIP are to be achieved in the years to come.

At the country-level, unmet need for contraception remains high, at 28.4% among married women in Uganda, and even higher in certain parts of the country such as the Busoga region (36.5%) (Uganda Bureau of Statistics, 2017b). Findings from the qualitative phase of this study with women and men in this region highlighted the complex, multi-level nature of contributors to unmet need, and women's and men's use of contraception. While reiterating some findings from existing literature, the study also provided new insights into the ways women and men think about and engage in contraceptive decisions and behaviour. While shouldering the bulk of the contraceptive burden, women faced many obstacles to contraceptive use; these included fears about the harms of contraceptives; partner opposition to contraceptive use; negative contraceptive side effects; gender and socio-cultural norms that dictated women's fertility choices; difficulties in accessing contraception due to unavailability, costs or distance; and poor service provision at the health system level. However, many women determinedly found ways to mitigate these challenges in order to manage the number and spacing of their pregnancies, and fulfil their roles of caring for their family and the home.

Men's views on contraception were mixed. The majority of male respondents were opposed to contraceptive use because they wanted more children, or were fearful of or inconvenienced by negative contraceptive side effects that affected their partner. Most men were also not in favour of the male contraceptive methods available to them; condom use was mostly perceived to be for casual relationships outside their marriage, or as protection against STIs/HIV, while the

implications of vasectomy on men's virility were too drastic for them to consider it a viable contraceptive option. Men's views on family size and gender roles were largely shaped by patriarchal values of Uganda society, which determined their own notions of male identity, masculinity and social status. These perspectives also influenced their views of women's roles in a marriage, family and society, as well as their ideas around male involvement in family planning. A minority of men, however, were more open to the idea of spousal communication and joint discussions around contraceptive decisions, as a result of more liberal views around gender equality and women's roles and status.

Based on these overarching conclusions, some implications and recommendations for policy and practice are outlined next, with particular regard to family planning service provision and the engagement of women and men in reproductive health programs. A preliminary report of the top-line findings from this thesis (Namasivayam et al., 2018) has been sent to service providers, District Health Office staff and implementing partners such as Marie Stopes Uganda and WellShare International, who I interacted with during my time in Iganga and Luuka. It is hoped that these findings will also be disseminated to MOH representatives and policy makers via implementing partners and the District Health office in Iganga, so that they are informed of the existing challenges and areas for improvement in terms of engaging these communities and increasing contraceptive uptake.

The penultimate section describes a few key areas for future research, followed by a final summary of this thesis.

9.1 IMPLICATIONS FOR POLICY AND PRACTICE

9.1.1 Changing community narratives about family planning

As evidenced from the 2016 DHS data in this study, awareness and knowledge about family planning were high among both women and men. However, the qualitative data from FGDs with women and interviews with men indicated that there still exist misconceptions and fears about contraception among most communities. The reliance of women and men on their peers' accounts and overheard stories as a source of contraceptive knowledge needs to be recognised as an integral factor in changing information shared through informal networks in the community. The sharing of positive testimonies from satisfied users in the community is an effective approach towards this, and has shown success in changing community openness and attitudes towards contraception (Adongo et al., 2014; Rutenberg & Watkins, 1997; Willcox et al., 2019). As suggested in the interviews with men, having an authoritative figure speak to the community and reinforce the positive messages about contraceptive use, particularly in terms of financial management of the family, could increase men's acceptance of contraceptive use. By shifting the focus of these conversations to the benefits of contraceptive use, it may be possible, over time, to overcome this barrier to contraceptive use and have more women and men use contraceptives without a sense of fear. Furthermore, clients would benefit from better integration efforts of effective side effects counselling and management into family planning services (Graffy et al., 2016; Kibira et al., 2015).

In addition, ensuring that the knowledge that people have about family planning comes from accurate, reliable sources rather than solely through rumours and stories from people in the community is critical. The positive association seen in the second quantitative study between men's contraceptive use and their exposure to family planning through media and discussion with a health worker further reinforce the importance of factual information being disseminated through legitimate channels of communication. These findings align with one of the strategic

areas of the Uganda FP-CIP, which has focused a Social Behaviour Change Communication strategy to increase demand for family planning by addressing and debunking the misconceptions and fears around contraceptive use (Ministry of Health Uganda, 2014).

9.1.2 Increasing men's acceptance of family planning

Women in the FGDs raised the issue of partner opposition to contraceptive use as a major barrier they still faced. Though the majority of men interviewed were not strongly opposed to contraceptive use, some were reluctant to use family planning due to wanting larger families, and fears around the negative side effects that their partners may experience. Unfortunately many men were also not in favour of male methods of contraception. Given their resistance to vasectomies and their association of condom use with protection against unwanted pregnancies and STIs/HIV in casual relationships, men were therefore not likely to use these methods themselves, except in a few situations or under specific circumstances. Nonetheless, men who were supportive of family planning cited the economic benefits of smaller, healthier families and being able to fulfil their role as the primary breadwinner as their main motivation for contraceptive use. Efforts aimed at increasing male acceptance of women's contraceptive use should recognise the socio-cultural context of men's place within society, in order to shape initiatives that reach men effectively (Bietsch, 2015; Kim & Arangwanda, 1997). Equally important is addressing men's concerns about contraception while highlighting the benefits that are particularly relevant to men and their responsibilities in caring for their families (Ezeh, Seroussi, & Raggers, 1996; Kishindo, 1994; Shattuck et al., 2011).

9.1.3 Encouraging couple communication and joint decision-making

Cultural norms in Uganda do not overtly promote discussions about fertility, family size and child spacing among couples. However, findings in this study and previous work, particularly among younger Ugandans, highlight changing mind sets and attitudes that allow for more open communication about such topics. For women, initiating conversations around family planning may also incur heavy social costs, particularly if their partner is opposed to family planning and adheres to traditional gender norms where the man is considered the primary decision-maker and final authority in the home. Though many men in this study were in favour of joint discussions and agreement about contraceptive use, many of the women, particularly older respondents, felt they could not talk about family planning with their partners. Gender dynamics that dictate women's and men's role in relationships therefore need to be accounted for when formulating family planning and integrated health programs. The discordant accounts from women and men about their contraceptive decision-making processes further emphasize the lack of communication around contraceptive use. Thus women and men need different skills to be able to initiate, accept, navigate and respond to such discussions, particularly for women to feel confident and safe when broaching such topics (Wegs et al., 2016).

Past initiatives around encouraging spousal communication and joint decision-making have shown positive associations with contraceptive use (Bawah, 2002; Ghanotakis et al., 2016; Stern et al., 2015; Wegs et al., 2016), and therefore family planning programs should continue to encourage this and where possible, include activities, techniques and tips to facilitate this among couples. As suggested in section 8.4.5, male involvement in this context could be more about male acceptance and approval of family planning rather than increasing male participation in programs. An initial step towards this would be facilitating joint participation in discussions and decisions around contraceptive use. As part of the communication skills needed for men, one focal aspect could be around encouraging men to be more open to

recognising the voice and opinions of their partners and reassuring them that such discussions are possible and acceptable within their relationships (Doyle et al., 2018; Hartmann, Gilles, Shattuck, Kerner, & Guest, 2012; Tilahun, Coene, Temmerman, & Degomme, 2015).

9.1.4 Rethinking gender norms

As mentioned in a few earlier sections of this thesis, a few programmatic attempts with a gender-transformative focus have attempted to change men's thinking and actions around gender norms in different east African contexts (Doyle et al., 2018; Ghanotakis et al., 2016; Stern et al., 2015). These different initiatives have had varying yet encouraging levels of success, but the sustained effects of such interventions around behavioural change remain unknown. Changes in attitude, behaviour and ways of thinking require time, and often such changes are only observed in subsequent generations of the population (Barker et al., 2010). Some degree of progress has nevertheless been made, particularly among youth and young adults, as evidenced from some of the findings in this study as well as the wider literature on young people in Uganda. The sub-group of more progressive, educated male interviewees in this study and their changing attitudes and views with regard to gender norms, relationship dynamics and family size are a pertinent example. With older women and men however, raising the issue of gender norms and trying to shift attitudes and perceptions of women's and men's roles in a largely patriarchal society will undoubtedly be more challenging, as these norms and practices have been ingrained in their societies for so long.

While it is unrealistic to expect large or rapid shifts in ways of thinking about gender norms and societal expectations of women and men in Uganda, it remains critical that initiatives advocating for a more egalitarian and less patriarchal perspective around gender equality and women's status continue. Such efforts are important for issues around reproductive health as

well as in the wider context of relationships and family dynamics. If concerted efforts are made to question harmful gender norms and include concepts around gender equality as part of normative education and societal discourse (Mirembe & Davies, 2001; Ninsiima et al., 2018), progress could perhaps be made in breaking the cycle of conforming to patriarchal practices and norms. Such attempts, albeit slow-moving, could be instrumental in changing the attitudes, perspectives and behaviour of younger generations of Ugandans over time.

9.1.5 Scaling up the CBD model of family planning service provision

In discussions about the quality of the provider interactions during family planning counselling, most women preferred VHTs to HCWs, citing reasons such as closer proximity, better relationships and familiarity with VHTs, as they were fellow members in the community. The sense of trust and lack of social distance between women and VHTs was integral to their satisfaction with the services received. The importance of VHTs in these contexts is crucial, particularly when distances to the clinics are large, transportation time and costs may be a barrier to contraceptive access, and the services provided by HCWs are less than satisfactory. The CBD model of contraceptive service provision, especially for the provision of short-term methods such as the pill and injectable, has great value in being scaled up in such contexts, aligning with its recognition as an effective alternative distribution channel in the Uganda FP-CIP and significantly increasing the availability of contraceptive options. Though women would still need to visit health centres for services that require providers with more technical skills and knowledge, scaling up the CBD model through increased training of VHTs would effectively remove many of the accessibility, affordability and service quality barriers to contraceptive access that women currently face (Nakayiza et al., 2014). Additionally, having VHTs trained in the management of side effects could increase the breadth of services available

in the community. Such a program would be particularly valuable in rural settings, where geographical accessibility to health centres remains a challenge. Furthermore, increasing the availability and accessibility of services for side effect management is an integral step in overcoming community beliefs that stem from the occurrence of such side effects.

9.1.6 Increasing the provision of long-term contraceptives

The convenience offered by long-term methods, detailed by some FGD respondents, included less frequent visits to the clinics and less cumulative costs incurred for repeat contraceptive prescriptions. Yet many women mentioned a lack of trained service providers for these methods. Women therefore faced challenges in accessing such methods readily, as well as finding providers who could facilitate the removal of these methods when women wished to discontinue the method. Often there was also a significant cost associated with these services, and hence a heavy reliance on mobile outreach clinics to obtain these services for free. However, these outreach clinics only visited the women's villages every two to three months, on a specific day. If women missed this opportunity, their wait was another two to three months, as the health centres in their vicinity did not have any or enough trained HCWs to effectively provide these methods.

Though there has been a recent push for the distribution and provision of long-term methods at the national level (Casey et al., 2013; Willcox et al., 2019) and a directive from the Uganda FP-CIP for increasing the number of providers trained to administer these, the realities on the ground for many women are restricted by the factors mentioned above. At the health system level, ensuring the continued procurement and availability of stocks of contraceptive methods (Grindlay et al., 2016), as well as increased resources and training for HCWs in the

administration of long-term methods, would go a long way in meeting women's demand for contraception to space or limit their pregnancies.

As evident from the findings of this study, parallel efforts at the different levels are needed if unmet need for contraception is to be effectively addressed. The social-ecological framework which was used for the consideration of multi-level influences in the respective quantitative and qualitative phases, is used here to demonstrate how the findings of this study can be translated into practice. The recommendations described above are depicted at the different levels of influence in Figure 9.1.

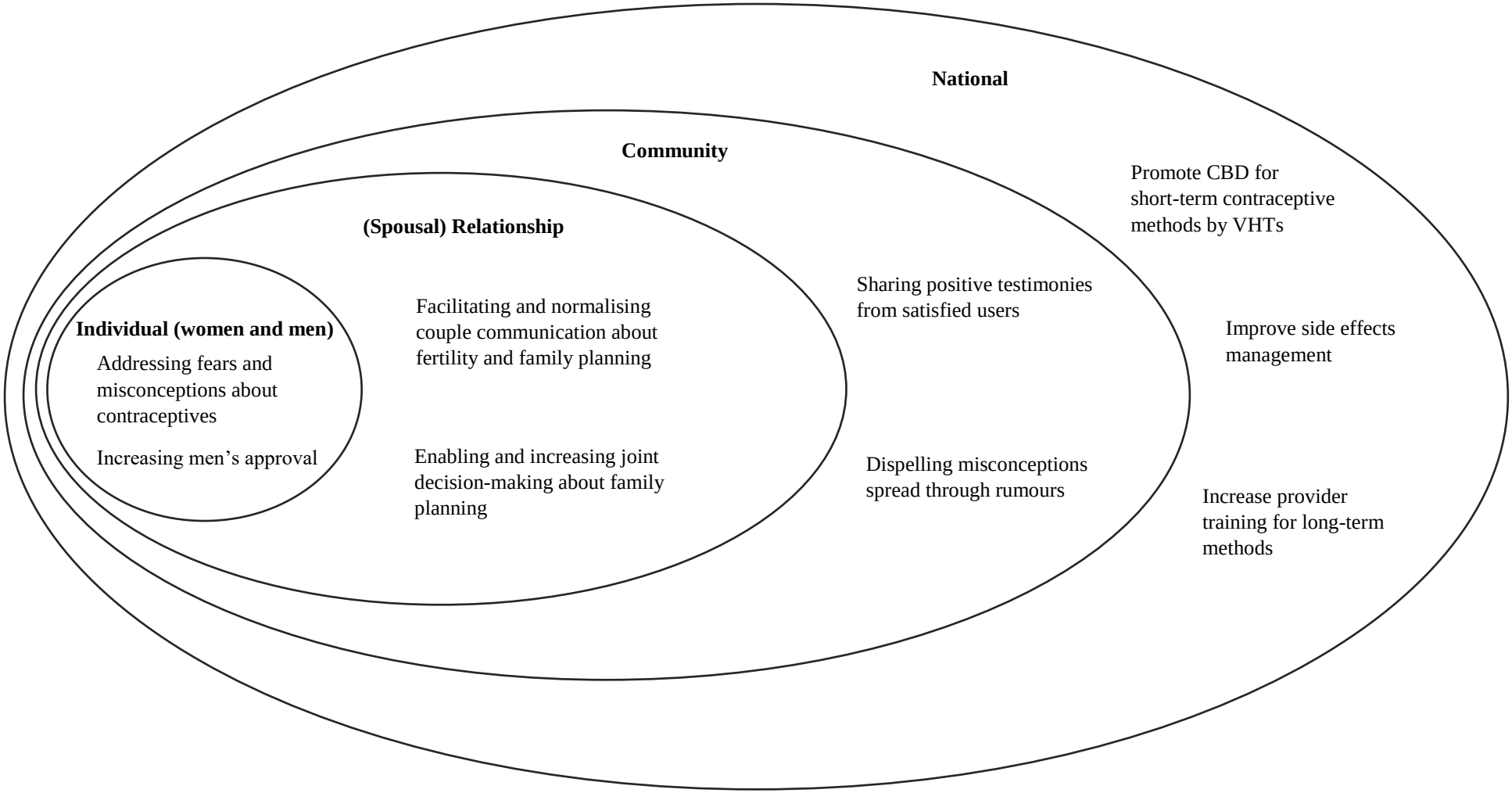

Figure 9.1. Recommendations for family planning initiatives at different levels of influence.

9.2 FUTURE RESEARCH DIRECTIONS

A number of research areas related to the topics covered in this thesis remain unexplored and in warrant of further investigation. The DHS surveys are a rich source of data from women, men and households in Uganda, and the breadth of maternal, child and reproductive health indicators that are available offer a number of possibilities for epidemiological study. Research on how contraceptive use is impacted by partner characteristics, discordant fertility desires and decision-making dynamics among couples would provide valuable insights into extending the findings of this thesis, and streamlining strategies and initiatives around improving spousal communication and joint decision-making. A further analysis of region-specific contraceptive patterns and associated factors/barriers to contraceptive use would enable national programs to account for regional differences in contraceptive use, particularly in areas such as the West Nile and Karamoja, where unmet need remains high. With the advent of new DHS datasets in the future, it is important that trends and patterns of contraceptive use are regularly re-assessed, so that the population-wide impact of family planning initiatives can be empirically evidenced. This is vital to understanding both women and men's contraceptive needs and behaviour, as such studies have been sporadic in the past.

Though some research exists on how decisions are made about contraceptive use among couples, there is less understanding about the nuances of couple communication (or a lack thereof) regarding family size, fertility preferences and contraceptive decision-making, particularly from studies that obtain accounts from both members of a couple. Insights on the negotiation processes that women engage in would be valuable in expanding our understanding of how cultural norms, gender dynamics, relationship inequalities and women's status affect contraceptive decisions. Equally unknown are the mechanisms of contraceptive decision-

making among women and men who are unmarried but sexually active, and those in polygamous relationships.

In this study, a subset of more educated and urban men had more progressive views on gender norms and equality in spousal relationships. These men were also more in favour of smaller families, emphasizing quality of life over the quantity of children. Research on how attitudes towards family size and contraceptive use are impacted by urban migration and education would be helpful in understanding the shift in perceptions and behaviour seen among such sub-populations. It would also be valuable to explore how men navigated changing ideologies around masculinity, particularly where this was linked to family size and their status in their community (Dufault & Meunier, 2017). Utilising these findings in gender-transformative programs for boys and young adult men, particularly around promoting gender-equitable norms (Barker et al., 2010; Doyle et al., 2018) could be pertinent topic for implementation research.

Both women and men in this study highlighted the importance of informal networks and community knowledge as a key source of information and influence on contraceptive decisions and uptake. While previous studies have highlighted how rumours and 'hearsay' in communities can affect contraceptive behaviour, little research exists on how these informal networks are created, how information is communicated in the community, and if the mechanisms of this differ for women and men. Findings from such a study could inform community-level interventions aimed at dispelling fears about contraceptive use, disassociating female contraceptive use from infidelity and/or prostitution and perhaps change the narratives that are passed on through informal networks in communities.

Finally, given the increasing presence of VHTs in family planning service provision, research looking into the effectiveness of VHTs in providing couple counselling and encouraging spousal communication could potentially increase male acceptance of contraception. This

could build on findings from a pilot study that looked at the value of male VHTs reaching other men through a CBD model in a community in West Uganda (Kipp & Flaherty, 2003a). Utilizing a participatory action research approach could also open up the opportunity to build and optimize a community-driven model of family planning service provision, leveraging on the relationships between VHTs and members in their community.

9.3 SUMMARY

This mixed methods study highlighted that contraceptive uptake in Uganda among both women and men has greatly increased over the last two decades, and more so in recent years. Such changes are commendable and important in terms of demographic, fertility and economic transitions within the country, and for the health of population groups such as women and children. Yet unmet need remains a problem for many women, and is caused by a plethora of barriers to contraceptive access and use. In particular, partner opposition to contraception and low male involvement remain definitive challenges to be addressed, more so in the patriarchal context of Ugandan society, where socio-cultural and gender norms operate largely in favour of men's dominance and women's subordination. This thesis sought to identify areas and chart a course where further gains in contraceptive uptake could potentially be made. Increasing male acceptance of contraception, spousal communication and joint-decision making on matters of reproductive health and contraceptive use are strategic areas of focus for family planning initiatives to effectively tackle the problem of unmet need among women.

This study was unique in the mixed methods approach taken to understand unmet need for contraception and factors that contribute to this at both the country level and in the Busoga region of east Uganda. The changes presented in contraceptive use over time and predictors of contraceptive use among women and men provide empirical evidence of the successes of

reproductive health programs thus far, and enable more targeted outreach efforts and family planning initiatives to reach populations most in need. A consideration of the barriers still faced by women in seeking out and using contraception allows for a more nuanced design of interventions at the individual, familial and societal levels. Lastly, examining men's own perspectives around male involvement in family planning has been an overlooked yet critical area of research to address gaps in the literature and practice around overcoming partner opposition to contraceptive use. This is particularly pertinent given the dual role of men as women's partners and gatekeepers of contraceptive use and reproductive health.

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APPENDIX A: APPROVAL FOR DHS SURVEY DATA ACCESS

Amrita Namasivayam

From: archive@dhsprogram.com
Sent: Wednesday, 31 May 2017 7:32 a.m.
To: Amrita Namasivayam
Subject: DHS Download Account Application
Attachments: DataNotes.doc

Please see attached.

You have been authorized to download "Survey" data from the Demographic and Health Surveys (DHS) Program. To begin downloading, please login at: http://www.dhsprogram.com/data/dataset_admin/login_main.cfm . If you are approved for a large number of countries, please consider using the Bulk Download System. For instructions on bulk downloading, please go to: http://userforum.dhsprogram.com/index.php?t=msg&th=5246 .

The requested data should only be used for the purpose of the registered research or study. To use the data for another purpose, a new research project must be "created" in your account. All DHS data should be treated as confidential, and no effort should be made to identify any household or individual respondent interviewed in the survey. The data must not be passed on to other researchers (other than co-researchers listed in your account), without the written consent of DHS. Users are required to submit a copy of any reports/publications resulting from using the DHS data files to: archive@dhsprogram.com.

The files you will download are in zipped format and must be unzipped before analysis. After unzipping, please print the file with the .DOC/DOCX extension (found in the Individual and Male Recode Zips). This file contains useful information on country specific variables and differences in the Standard Recode definition. You will also need the DHS Recode Manual: http://dhsprogram.com/publications/publication-dhsg4-dhs-questionnaires-and-manuals.cfm . This manual contains a general description of the recode data file, including the rationale for recoding; a description of coding standards and recode variables, and a listing of the standard dictionary, with basic information relating to each variable.

It is essential that you consult the questionnaire for the country, when using the data files. Questionnaires are in the appendices of each survey's final report: http://dhsprogram.com/publications/publications-by-type.cfm . We also recommend that you make use of the Data Tools and Manuals at: http://www.dhsprogram.com/accesssurveys/technical_assistance.cfm .

For problems with your user account, please email archive@dhsprogram.com. For data related questions, please register to participate in the DHS Program User Forum at: http://userforum.dhsprogram.com .

The Demographic and Health Surveys (DHS) Program ICF
530 Gaither Road
Suite 500
Rockville, MD 20850
USA

LOGIN INFORMATION:
Login Email: amrita.namasivayam@pg.canterbury.ac.nz
Password: (use password selected when you registered)

APPENDIX B: ETHICS APPROVAL

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2017/66

4 August 2017

Amrita Namasivayam
Health Sciences
UNIVERSITY OF CANTERBURY

Dear Amrita

The Human Ethics Committee advises that your research proposal "An Intervention-based Approach to Address the Unmet Need for Contraception in Uganda" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 2nd August 2017.

Best wishes for your project.

Yours sincerely

pp. R. Robinson

Associate Professor Jane Maidment
Chair
University of Canterbury Human Ethics Committee

MBARARA UNIVERSITY OF SCIENCE AND TECHNOLOGY
P.O. Box 1410, Mbarara Uganda. Tel: +256 485433795; Fax: +256 4854 20782
RESEARCH ETHICS COMMITTEE
E-mail: sec.rec@must.ac.ug

Our Ref: MUREC 1/7

Date: October 10, 2017

Amrita Namasivayam
PhD Student
University of Canterbury
New Zealand

Re: **Submitted Protocol on "An intervention based approach to address unmet need for contraception in Uganda" 07/09-17**

Mbarara University of Science & Technology
P. O. Box 1410, Mbarara
RESEARCH ETHICS COMMITTEE
10 OCT 2018
APPROVED
VALID UNTIL DATE SHOWN ABOVE

Type: [√] Initial Application
[ ] Protocol Amendment
[ ] Letter of Amendment (LOA)
[] Continuing Review
[ ] Material Transfer Agreement
[ ] Other, specify: _____

Reference is made to the above protocol which was submitted to the Research Ethics Committee for consideration and approval.

It is noted that you have addressed all the concerns earlier raised by the Committee.

I am pleased to inform you that your study has been approved for a period of one year from **October 11, 2017** up to **October 10, 2018.**

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigator must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for review and approval **prior** to the activation of the changes. The REC application number assigned to the research should be cited in any correspondence.
3. Reports of unanticipated problems involving risks to participants or other must be submitted to the REC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for REC review.
4. Only approved consent forms are used in enrolment of participants. All consent forms signed by subjects and/or witness should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to REC eight weeks prior to the above expiration date of October 10, 2018 in order to continue the study beyond the approved period.**

Failure to submit a continuing review application in timely fashion may result in suspension or termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.

6. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of documents approved in the application:

Document	**Language**	**Version**
Proposal	English	Version 1
Protocol form	English	Version
Data Collection tools	English	Version **October 2017**
Consent form	English	Version **October 2017**

I wish you all the best.

Dr. Francis Bajunirwe
CHAIR,
MUST RESEARCH ETHICS COMMITTEE

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2017/66 Amendment 1

12 November 2018

Amrita Namasivayam
Health Sciences
UNIVERSITY OF CANTERBURY

Dear Amrita

Thank you for your request for an amendment to your research proposal "An Intervention-based Approach to Address the Unmet Need for Contraception in Uganda" as outlined in your emails dated 19th and 29th October, and 6th November 2018.

I am pleased to advise that this request has been considered and approved by the Human Ethics Committee.

Yours sincerely

pp. R. Robinson

Professor Jane Maidment
Chair, Human Ethics Committee

APPENDIX C: FGDS INFORMATION SHEET AND CONSENT FORMS

School of Health Sciences
Telephone: +64 2041400267

Email: amrita.namasivayam@pg.canterbury.ac.nz

05/01/2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Addressing the need for family planning in Uganda

Information sheet for focus group discussion participants

Women and men at different ages might have different needs and reasons to use family planning As a PhD student working on women's health I'm interested to find out the reasons why women and men in Uganda choose to use family planning (or not), and how they make these decisions.

Abakazi na'abasasdha ku myaaka egye'ndhawulo baba no'obwetaavu oba nensonga edhendaulo okukozesa' enteekateka yamakka. Nga omusomi ali kukenkuka kku byo'bulamu bwaabakazi, Nnhendha okuzuula ensonga lwaki abakazi na'abasadha mu Uganda basalawo okukozesa (oba obutakozesa) nteekateka ya'amakka, era basalawo batya.

If you choose to take part in this study, your involvement will be in the form of participation in a group discussion about family planning. There will be 4-8 participants, grouped by similar age and sex, and the discussion should take about 1 hour. Some of the topics that will be discussed include whether you (and your current partner(s)) use family planning, how you (and your partner(s)) make family planning decisions, the types of family planning you know about, and who/where you would go to for advice about family planning). Some of these topics may be personal and sensitive to you, and you may choose not to answer some of the questions. You will not be pressured to share or contribute information at any time.

Bwoba osazeewo okwenigila mumusomo gunno, okwenigilamu' kwo kwidha kuba kwakukubaganya bilowozo nga muli mubukunsu kubigemagana ku famile). (Buli kikunsu kiidha kubaamu abantu okuva kubaana okutuuka kumunaana (4-8), buli kikunsu kidha kubaamu ba'myaka milala nekikula kilala era nokukubaganya ebilowozo kuli nakutwala sawa nga ndhala. Ebimu ku bigya okwogerwaaku biidha kubamu enkozesa yo ighwe, oba mukagwaawo eya famire, era ngeri ki ighwe oba mukagwaawo yaasalawo ku bye 'nteekateka eyamakka, nengeri edhendaulo/ ebika byemwidhiku, era ani oba gha ghwooyinza okugya okufuna okuwabulwa ku bye' nteekateka yaamakka. Ebimu kubwetugya okwoogelaaku biyinza okuba byamunda inho kuluyi lwo, era oyinza okusalawo obutailamu ebimu kubyo. Wazila saawa yogya kuwalirizibwa kugabanaku oba kuwaayo bidhuubo byo waile.

Your participation is voluntary and you have the right to withdraw at any stage without disadvantage to yourself. If you agree to participate, please be aware that the discussion will be audio-recorded. There will be a local facilitator to guide the discussion, and I will be there to take notes.

Okwenigilamu'kwo kwakyeeyendele era olina eidembe okubivaamu mukiseera kyona kyona awazila kukosebwa. Bwoba oikiliza okwenigilamu, nkusaba okitegeele nti byetujja okwoogera bigya kugemebwa kukatambi. Waidha kubaawo omukumakuma owaawano anatulungamya mukukubaganya ebilowoozo, era ndidha kubaawo nga mpandiika.

The results of the project are intended to inform the improvement of existing family planning programs in your community. The data may be published, but you are assured of complete confidentiality; your identity will not be made public. To ensure confidentiality, your answers will remain anonymous, and your name and any other personal information will not be asked for or recorded. If you disclose any identifying data, this will not be included in the study. Only I, as the researcher, and my primary supervisor will have access to all the data, and this will be stored electronically in password-protected files The study results will be used in my thesis a thesis is a public document and will be available through the University of Canterbury Library and may be published in journals or presented at conferences. As required by the University's research policy, the data will be destroyed after 10 years.

Ebinaava mu musomo gunno biidha kuba ne'ekigendelerwa kya kutumbula muby'empeeleza ye'nteekateka ya'amakka ekozesebwa mukitundu kyo. Amawulire gayinza okusansanizibwa mu' bantu, wabula kakasa nti waidha kubaawo okukuuma ebyaama ebikugemaku; ebikulaga ki kyoli, tibiidha kulagibwa mulujjude. Okkukakasa nti byonotukobela bidha kusigala nga bya'akyaama, amaina go nabuli kikugemaku tibiidha kugemebwa kukatambi. Bwonaba otubwikuliile ebikugemaku, binno tibidha kugaitibwa kumusomo gunno, waile okugemebwa kukatambi. Okutolaku nze omunoonenkeleza ni mukama wange niffe twenka abalina olukusa okutukilira ebidhuubo byona byona ela biidha kukumwibwa mungeri ya kikungu. Ebinava mumusomo gunno bidha kukozesebwa mubiwandiko by'ekitabo kyange ela bidha kuba byaganibwa mwitelekero lye itendekelo lya Canterbury, nikumikutu gya yintaneti, ni munkuungano ennene. Nga ekyeetaago mubyo'kunonenkeleza ku yunivasite amawulire ganno gaakusanizibwaawo luvayima lwamyakka ikumi.

The project is being carried out for a doctorate study by myself, Amrita Namasivayam, under the primary supervision of Dr. Sarah Lovell, who can be contacted at*sarah.lovell@canterbury.ac.nz.* We will be pleased to discuss any concerns you may have about participation in the project, and you may email us at any time for this purpose. At the end of the study, a summary of the results will be made available to you, should you be interested to find out more.

Omusomu gunno gulikukolebwa lwa kutuuka kwiidaala lwa kusoma , era nze Amrita Namasivayam, ndi kukolera wansi wo'mulungamya wange asokelwaaku dokita Sarah Lovell, gwosobola okutuukilira kumutimbagano gwa yintaneti ku sarah.lovell@canterbury.ac.nz. Twiidha kusanuka nga otukobeile byoidhi ebigema mu kwenigila mu musomo gunno, ela osobola okutuwelezaku obubaka nga okozesa yintaneti esaawa yona yona ku lwo'mulamwa gunno. Bwetuliba tumazze okunonenkeleza twiidha kukuweleza ku mubufunze ebinavaamu bwo'liba nga obyenze.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch(human-ethics@canterbury.ac.nz).

Omusomo gunno gwaakebelebwa ela gwaakakasibwa akakiiko akempisa ya'bantu mukunonenkeleza ku yunivasite ya Canterbury ela abeenigila mukunonenkeleza balina okuweleza okwemulugunia kwaibwe eli Ssentebe wakakiko akebyempisa ya'abantu ku yunivasite ya Canterbury, Private Bag 4800, Christchurch(human-ethics@canterbury.ac.nz).

If you agree to participate in the study, please complete the consent form and return it to me before the start of the group discussion.

Bwoba oikiliza okwenigila mumusomo gunno, tukusaba oiduze olupapula olwokwikiliza ela olwiyize yendi nga tukaali kutandiika kukubagania bilowoozo byawalala .

School of Health Sciences
Telephone: +64 2041400267

Email: amrita.namasivayam@pg.canterbury.ac.nz

21/06/2017

Addressing the need for family planning in Uganda

Consent form for participants in focus group discussions

Please indicate with a tick that you agree to the following:

Nkusaba otteku akakebela nti oikilizagania nibino waansi

- ☐ I have been given a full explanation of this project and have had the opportunity to askquestions. ***(Mpeleibwa okwinonolwa okumala ku musomo gunno ela mbaile nnho 'mukisa ogubuuza ebibuuzo)***
- ☐ I understand what is required of me if I agree to take part in theresearch***. (Ntegeera buuli kyeetagisa okuva yendi bwenba ndikiliiza okuba kituundu mukunonenkeleza)***
- ☐ I understand that by agreeing to participate, I also agree to the discussion being audio-recorded. ***(Ntegeera nti bwemba ndikiliza okwenigilimu, ela ndikiliza okugema kukatambi byetubagainiaku ebilowoozo)***
- ☐ I understand that participation is voluntary and I may withdraw at any time withoutpenalty. Withdrawal of participation will also include the withdrawal of any information I haveprovided, should this remain practically achievable. ***(Ntegeire nti okwenigilamu kwaakyeyendele era nsobola okubivamu sawa yona yona awazila kusalilwa musango. Okuva mukwenigilamu kitwaliramu no'kutolayo amawulire gemba nkuwaile bwekiba nga kisoboka okukolebwa)***
- ☐ I understand that any information or opinions I provide will be kept confidential by theresearcher and her primary supervisor, and that any published or reportedresults will not identify the participants. I understand that a thesis isa public document and will be available through the University of Canterbury library. (***Ntegeire nti amawulire gona gona oba ebilowozo bye'mpayo biidha kukumibwa omunonenkeleza omukulu ni mukamawe nga byakyaama era nti ebyo ebina gabanibwa mulukale tibiidha kulaga abo abenigiile mu. Ntegeire nti ekitabo kyonowandiika kiidha kuba kyabuli muntu okuva mwitelekelo lwa yunivasite ya Canterbury)***

- ☐ I understand that all data collected for the study will be kept in password-protected electronic form and will be destroyed after 10 years. (***Nkitegeire nti buli mawulire agaku'nganizibwa kumusomo gunno gaidha kukumwibwa na kisumuluzo ela gaidha kumalibwaawo oluwainuma lwamyaka ikumi)***
- ☐ I understand the risks associated with taking part and how they will be managed.

  (ntegeire obuzibu obugemagana nokwenigilamu ela nengeli yo'kubuvunuka)
- ☐ I understand that I can contact the researcher, Amrita, at amrita.namasivayam@pg.canterbury.ac.nz, or her primary supervisor, Dr Sarah Lovell, at sarah.lovell@pg.canterbury.ac.nz, for further information. If I have any complaints, I cancontact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800,Christchurch (human-ethics@canterbury.ac.nz). (***Nkitegeire nti nninza okutuukilila omunonhenkeleza Amrita ku yintaneti ya amrita.namasivayam@pg.canterbury.ac.nz oba mukamawe asooka dokita Sarah Lovell, at sarah.lovell@pg.canterbury.ac.nz bwemba nnenda ebisingawo. Bwemba ndina okwemulugunia kwona kwona, nninza okutukilila sentebe wakakiko akebyenpisa yabantu owe Private Bag 4800,Christchurch (human-ethics@canterbury.ac.nz).)***
- ☐ I understand that a summary of the results will be made available to me at the end of the study. ***(Nkitegeire nti oluvainuma lwo'musomo gunna ebinavaamu bidha kumpebwa mubumpimpi)***
- ☐ By signing below, I agree to participate in this research project. ***(Okusaininga wansi mba nsazeewo okwenigila mumusomo guuno)***

Name:_____ Signed:_____ Date:

_____

Amainha---------- Saini---------- Enaku dhomwezi-------

Please return the completed and signed consent form to the researcher before the start of the discussion.

(Nkusaba oize e fomu yomaze okwiiduzaamu eli omunonenkeleza omukulu nga tukaali kutandika kukubagania bilowozo)

APPENDIX D: PRE-FGD QUESTIONNAIRE

School of Health Sciences
Telephone: +64 2041400267

Email: amrita.namasivayam@pg.canterbury.ac.nz

Addressing the need for family planning in Uganda

Pre-discussion questionnaire (for FGD participants)

(please fill this and return it to the researcher before the start of the discussion)

- Age:
- Highest level of education:
- Ethnicity:
- Religion:
- Number of children:
- Occupation:
- District:
- Which contraceptive methods do you use currently, if any?
    - Oral pills
    - Injectables
    - Male condoms
    - Female condoms
    - Rhythm method/moon beads
    - Withdrawal
    - Folk methods
    - IUDs
    - Implants
    - Female sterilization
    - Vasectomy
    - Emergency contraception
    - Lactational amenorrhoea (breastfeeding)
    - I don't use any method

APPENDIX E: FGD QUESTION SCHEDULE

For women and men:

General/ initial questions

- What are your thoughts on an ideal family size?
    - How many children would you like to have? How many children would your husband/wife like to have?
- What are your thoughts about the ideal timing and spacing of births?
- What are the current beliefs or opinions about family planning in your community?

Methods of family planning

- Could you tell me about any methods of family planning that you are familiar with? (Prompts: modern/traditional/short-term/long-term)
- For those of you using a method currently- are you happy with that method? (Prompts: cost/ side effects/convenience/ availability/ partner approval/covert?)
- What do you think are the advantages and disadvantages of these different methods?
- Which of these methods, if any, would you recommend to a friend or family member? Why?

Decisions and access around family planning

- How do you make decisions around using family planning? (both whether or not to use family planning, and which method(s) to use)
    - When you chose to use your current method, can you tell me why you chose that method and not another?
    - Do you prefer a long-term method or a short-term method? Why?
- How does the relationship with your partner influence in your decision about using family planning? (Prompts: consent, permission, money, etc.)
    - Are you comfortable discussing family planning with your partner?
    - Could you tell me about a typical discussion you might have with your partner about family planning?
    - Would you like your partner to be more (or less) involved?
- Who else, among your family or friends, might factor into your decision to use family planning?
- How does family planning impact or benefit your family? (Prompts: health of mother, children, economic benefits- more money to feed the family, pay school fees)
- What is your opinion about using family planning for STIs/HIV prevention (barrier methods)? (Prompts: covert use, discussion with partners)
- Where do you access family planning?
- What are the factors that could prevent you from using family planning?
    (Prompts: Cost, partner objections, fear of side effects, provider attitudes, lack of access, unavailability, inability to go to the clinic, other people's bad experiences, religion, culture, etc.)

Healthcare providers/VHTs

- What has your experience been talking to a healthcare provider/clinic/VHT about family planning?
- How do you feel about having a community healthcare worker contact you regularly about family planning?
- How well are current health services (this includes the clinic as well as the VHTs) addressing your contraceptive needs?
    - What is the counselling process you go through when you go to the clinic to get family planning? (Prompts: What does the nurse/midwife ask? What are the family planning options discussed?)
    - What do you do if there is a stock-out at the clinic that you get your family planning methods from? (Prompts: go somewhere else, discontinue, wait for the stocks to arrive)
        - Is this something that happens often?
    - How do you feel about the ability of the healthcare staff to provide family planning services that suit your needs? (Prompts: are side effects/health concerns discussed, choice of alternative methods, trained staff available to provide long-term and/or permanent methods, staff spend enough time for counselling)
    - What is your opinion about the clinic opening hours and waiting times, as well as the convenience of getting there? (Prompts: distance, cost, time taken)

For women only:

- What are the challenges, if any, that teenagers and unmarried women may face in getting access to information about family planning, or to contraceptives themselves?
    - What would make this process easier for them?
- Women may sometimes have unplanned pregnancies. What would they usually do if this happens?
- If the situation happens that you have unprotected sex but don't want to get pregnant, what would you do?
- What are the factors that would encourage you to switch from a short-term method to a long-term method, if you didn't want any more children?

APPENDIX F: FGD PARTICIPANT INFORMATION

Focus group code	Age	Education	Religion	No. of children	Occupation	District	Family planning method
Rural women (18-24 years)	24	Primary 2	Muslim	2	Farmer	Nakigo	Injectables
	19	Senior 4	Muslim	0	Business woman	Nakigo	Injectables
	21	Senior 4	Protestant	2	Peasant	Nakigo	Breastfeeding
	23	Primary 7	Protestant	2	Farmer	Nakigo	Injectables
	18	Senior 3	Protestant	0	Student	Nakigo	No method
	18	Senior 3	Protestant	0	Student	Nakigo	No method
	21	Primary 5	Muslim	1	Farmer	Nakigo	Injectables
	22	Primary 7	Muslim	1	Hair dresser	Nakigo	Injectables
Urban women (18-24 years)	24	Senior 1	Muslim	2	Tailor	Iganga	Injectables, pills previously
	23	Senior 6	Muslim	1	Business woman	Iganga	No method
	24	Senior 1	Born again Christian	4	Housewife	Iganga	IUDs, implants
	20	Senior 3	Muslim	1	Business woman	Iganga	Male condoms
	18	Senior 1	Muslim	1	House wife	Iganga	Female condoms
	23	Primary 6	Muslim	3	House wife	Iganga	Male condoms
	24	Senior 1	Muslim	5	House wife	Iganga	Injectables, male condoms
Rural women (25-34 years)	25	Primary 7	Muslim	3	Peasant farmer	Luuka	Injectables
	29	Senior 3	Protestant	6	Peasant	Luuka	No method
	27	Primary 7	Protestant	4	Peasant farmer	Luuka	Injectables
	27	Primary 6	Protestant	4	Peasant farmer	Luuka	No method
	27	Senior 2	Protestant	3	Peasant farmer	Luuka	Injectables
Urban women (25-34 years)	27	Diploma	Protestant	2	Social worker	Iganga	Injectables
	32	Senior 3	Muslim	3	Housewife	Iganga	Injectables
	28	Senior 2	Protestant	3	Housewife	Iganga	Injectables
	30	Primary 7	Muslim	4	Housewife	Iganga	Injectables
	27	Senior 4	Christian	3	Teacher	Iganga	Oral pills
	25	Senior 2	Protestant	2	Housewife	Iganga	Oral pills
	25	Senior 2	Muslim	2	Business woman	Iganga	Injectables
Rural women (over 35 years)	38	Primary 7	Muslim	5	Farmer	Luuka	Injectables
	45	Primary 3	Born again Christian	6	Business lady	Luuka	Injectables

	39	Primary 6	Protestant	6	Business lady	Luuka	Injectables
	45	Primary 3	Muslim	8	Farmer	Luuka	No method
	42	Primary 5	Didn’t enter	8	Farmer	Luuka	Injectables
	57	Primary 5	Didn’t enter	8	Farmer	Luuka	No method
Urban women	50	Senior 3	Christian	5	Market vendor	Iganga	No method
(over 35 years)	42	Primary 7	Muslim	4	Hotel manager	Iganga	Injectables
	48	Primary 5	Muslim	7	Business woman	Iganga	Implants
	40	Primary 3	Muslim	3	House wife	Iganga	No method
	40	Primary 7	Protestant	8	Housewife	Iganga	Oral pills
	40	Primary 7	Muslim	3	Chef	Iganga	Male condoms
	37	Senior 4	Protestant	1	Secretary	Iganga	No method
	35	Primary 7	Muslim	4	Market vendor	Iganga	Injectables

APPENDIX G: MEN'S INTERVIEWS INFORMATION SHEET AND CONSENT FORMS

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

School of Health Sciences
Telephone: +64 2041400267
Email: amrita.namasivayam@pg.canterbury.ac.nz
01/11/2018

Addressing the need for family planning in Uganda
Information sheet for interview participants

Women and men at different stages of life might have different needs and reasons to use family planning. As a PhD student working on women's health, I'm interested to find out about how decisions around family planning are made in Uganda, why men in Uganda choose to use family planning (or not), and ways to better engage men in discussions around family planning.

Abakazi na'abasasdha ku myaaka egye'ndhawulo baba no'obwetaavu oba nensonga edhendaulo okukozesa' enteekateka yamakka. Nga omusomi ali kukenkuka kku byo'bulamu bwaabakazi, Nnhendha okuzuula ensonga lwaki abakazi na'abasadha mu Uganda basalawo okukozesa (oba obutakozesa) nteekateka ya'amakka, era basclawo batya enderi yokugemagahnimu abaami mu nteekateka ya amakka.

If you choose to take part in this study, your involvement will be in the form of an interview about family planning, which should take about 30 minutes to 1 hour. Some of the topics that will be discussed include whether you (and your current partner(s)) use family planning, your opinions about and experiences with family planning, and ways in which men might be better involved in programs on family planning. Some of these topics may be personal and sensitive to you, and you may choose not to answer some of the questions. You will not be pressured to share or contribute information at any time.

Bwoba osazeewo okwenigila mumusomo gunno, okwenigilamu' kwo kwidha kuba kwakukubaganya bilowozo ku nteekateka yamakka). nokukubaganya ebilowozo kuli nakutwala wagati we dhakika amakumi asatu ne sawa nga ndhala. Ebimu ku bigya okwogerwaaku biidha kubamu enkozesa, oba mukagwaawo yaasalawo ku bye 'nteekateka eyamakka, nengeri edhendaulo/ ebika byemwidhiku, era ani oba gha ghwooyinza okugya okufuna okuwabulwa ku bye' nteekateka yaamakka. Ebimu kubwetugya okwoogelaaku biyinza okuba byamunda inho kuluyi lwo, era oyinza okusalawo obutailamu ebimu kubyo. Wazila saawa yogya kuwalirizibwa kugabanaku oba kuwaayo bidhuubo byo waile.

If you agree to participate, please be aware that the discussion will be audio-recorded. There will be a local facilitator to guide the discussion, and I will be there to take notes. Your participation is voluntary and you have the right to withdraw at any stage without disadvantage to yourself. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, I will remove information relating to you. However, once analysis of raw data starts on 01 January 2019, it will become more difficult to remove the influence of your data on the results.

Okwenigilamu'kwo kwakyeeyendele era olina eidembe okubivaamu mukiseera kyona kyona awazila kukosebwa. Bwoba oikiliza okwenigilamu, nkusaba okitegeele nti byetujja okwoogera bigya kugemebwa kukatambi. Waidha kubaawo omukumakuma owaawano anatulungamya mukukubaganya ebilowoozo, era ndidha kubaawo nga mpandiika. Osobola okusaba byotwizeemuokubiiza oba okubyokya ekisera kyona kyona. Bwoba nga oviremu, njakutolamu obubaka obukugemaku. Aye, bwetunaba tutandise okwetegereza byoba nga otwizeemu ku 01 january 2019 nga dituse kidakuba kizibu okutolamu ebyo byanaba otwizeemu.

The results of the project are intended to inform the improvement of existing family planning programs in your community. The data may be published, but you are assured of complete confidentiality; your identity will not be made public. To ensure confidentiality, your answers will remain anonymous, and your name and any other personal information will not be asked for or recorded. If you disclose any identifying data, this will not be included in the study. Only I, as the researcher, and my primary supervisor will have access to all the data, and this will be stored electronically in password-protected files. The study results will be used in my thesis (a thesis is a public document and will be available through the University of Canterbury Library) and may be published in journals or presented at conferences. As required by the University's research policy, the data will be destroyed after 10 years.

Ebinaava mu musomo gunno biidha kuba ne'ekigendelerwa kya kutumbula muby'empeeleza ye'nteekateka ya'amakka ekozesebwa mukitundu kyo. Amawulire gayinza okusansanizibwa mu' bantu, wabula kakasa nti waidha kubaawo okukuuma ebyaama ebikugemaku; ebikulaga ki kyoli, tibiidha kulagibwa mulujjude. Okkukakasa nti byonotukobela bidha kusigala nga bya'akyaama, amaina go nabuli kikugemaku tibiidha kugemebwa kukatambi. Bwonaba otubwikuliile ebikugemaku, binno tibidha kugaitibwa kumusomo gunno, waile okugemebwa kukatambi. Okutolaku nze omunoonenkeleza ni mukama wange niffe twenka abalina olukusa okutukilira ebidhuubo byona byona ela biidha kukumwibwa mungeri ya kikungu. Ebinava mumusomo gunno bidha kukozesebwa mubiwandiko by'ekitabo kyange ela bidha kuba byaganibwa mwitelekero lye itendekelo lya Canterbury, nikumikutu gya yintaneti, ni munkuungano ennene. Nga ekyeetaago mubyo'kunonenkeleza ku yunivasite amawulire ganno gaakusanizibwaawo luvayima lwamyakka ikumi.

The project is being carried out for a doctorate study by myself, Amrita Namasivayam, under the primary supervision of Dr. Sarah Lovell, who can be contacted at *sarah.lovell@canterbury.ac.nz*. We will be pleased to discuss any concerns you may have about participation in the project, and you may email us at any time for this purpose. At the end of the study, a summary of the results will be made available to you through the health workers that oversee your community, should you be interested to find out more.

Omusomu gunno gulikukolebwa lwa kutuuka kwiidaala lwa kusoma , era nze Amrita Namasivayam, ndi kukolera wansi wo'mulungamya wange asokelwaaku dokita Sarah Lovell, gwosobola okutuukilira kumutimbagano gwa yintaneti ku sarah.lovell@canterbury.ac.nz. Twiidha kusanuka nga otukobeile byoidhi ebigema mu kwenigila mu musomo gunno, ela osobola okutuwelezaku obubaka nga okozesa yintaneti esaawa yona yona ku lwo'mulamwa gunno. Bwetuliba tumizze okunonenkeleza twiidha kukuweleza ku mubufunze ebinavaamu bwo'liba nga obyenze.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

Omusomo gunno gwaakebelebwa ela gwaakakasibwa akakiiko akempisa ya'bantu mukunonenkeleza ku yunivasite ya Canterbury ela abeenigila mukunonenkeleza balina okuweleza okwemulugunia kwaibwe eli Ssentebe wakakiko akebyempisa ya'abantu ku yunivasite ya Canterbury, Private Bag 4800, Christchurch(human-ethics@canterbury.ac.nz).

If you agree to participate in the study, please complete the consent form and return it to me before the start of the group discussion.

Bwoba oikiliza okwenigila mumusomo gunno, tukusaba oiduze olupapula olwokwikiliza ela olwiyize yendi nga tukaali kutandiika kukubagania bilowoozo byawalala.

School of Health Sciences
Telephone: +64 2041400267
Email: amrita.namasivayam@pg.canterbury.ac.nz
01/11/2018

Addressing the need for family planning in Uganda
Consent form for participants in interviews

Please indicate with a tick that you agree to the following:

Nkusaba otteku akakebela nti oikilizagania nibino waansi

- ☐ I have been given a full explanation of this project and have had the opportunity to ask questions. ***(Mpeleibwa okwinonolwa okumala ku musomo gunno ela mbaile nnho 'mukisa ogubuuza ebibuuzo)***
- ☐ I understand what is required of me if I agree to take part in the research. ***(Ntegeera buuli kyeetagisa okuva yendi bwenba ndikiliiza okuba kituundu mukunonenkeleza)***
- ☐ I understand that by agreeing to participate, I also agree to the discussion being audio-recorded. ***(Ntegeera nti bwemba ndikiliza okwenigilimu, ela ndikiliza okugema kukatambi byetubagainiaku ebilowoozo)***
- ☐ I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided, should this remain practically achievable. ***(Ntegeire nti okwenigilamu kwaakyeyendele era nsobola okubivamu sawa yona yona awazila kusalilwa musango. Okuva mukwenigilamu kitwaliramu no'katolayo amawulire gemba nkuwaile bwekiba nga kisoboka okukolebwa)***
- ☐ I understand that any information or opinions I provide will be kept confidential by the researcher and her primary supervisor, and that any published or reported results will not identify the participants. I understand that a thesis is a public document and will be available through the University of Canterbury library. (***Ntegeire nti amawulire gona gona oba ebilowozo bye'mpayo büdha kukumibwa omunonenkeleza omukulu ni mukamawe nga byakyaama era nti ebyo ebina gabanibwa mulukale tibiidha kulaga abo abenigiile mu. Ntegeire nti ekitabo kyonowandiika kiidha kuba kyabuli muntu okuva mwitelekelo lwa yunivasite ya Canterbury)***
- ☐ I understand that all data collected for the study will be kept in password-protected electronic form and will be destroyed after 10 years. (***Nkitegeire nti buli mawulire agaku'nganizibwa kumusomo gunno gaidha kukumwibwa na kisumuluzo ela gaidha kumalibwaawo oluwainuma lwamyaka ikumi)***
- ☐ I understand the risks associated with taking part and how they will be managed. ***(ntegeire obuzibu obugemagana nokwenigilamu ela nengeli yo'kubuvunuka)***

- ☐ I understand that I can contact the researcher, Amrita, at amrita.namasivayam@pg.canterbury.ac.nz, or her primary supervisor, Dr Sarah Lovell, at sarah.lovell@pg.canterbury.ac.nz, for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz). ***(Nkitegeire nti nninza okutuukilila omunonhenkeleza Amrita ku yintaneti ya amrita.namasivayam@pg.canterbury.ac.nz oba mukamawe asooka dokita Sarah Lovell, at sarah.lovell@pg.canterbury.ac.nz bwemba nnenda ebisingawo. Bwemba ndina okwemulugunia kwona kwona, nninza okutukilila sentebe wakakiko akebyenpisa yabantu owe Private Bag 4800,Christchurch (human-ethics@canterbury.ac.nz).)***

- ☐ I understand that a summary of the results will be available to at the end of the study. ***(Nkitegeire nti oluvainuma lwo'musomo gunna ebinavaamu bidha kumpebwa mubumpimpi)***
- ☐ By signing below, I agree to participate in this research project. ***(Okusaininga wansi mba nsazeewo okwenigila mumusomo guuno)***

Name:_____Signed:_____Date:_____

Amainha---------- Saini---------- Enaku dhomwezi-------

Please return the completed and signed consent form to the researcher before the start of the discussion.

(Nkusaba oize e fomu yomaze okwiiduzaamu eli omunonenkeleza omukulu nga tukaali kutandika kukubagania bilowozo)

APPENDIX H: PRE-INTERVIEW QUESTIONNAIRE

School of Health Sciences
Telephone: +64 2041400267

Email: amrita.namasivayam@pg.canterbury.ac.nz

Addressing the need for family planning in Uganda

Pre-discussion questionnaire (for interview participants)

(please fill this and return it to the researcher before the start of the discussion)

- Age:
- Highest level of education:
- Ethnicity:
- Religion:
- Number of children:
- Occupation:
- District:
- Which family planning methods do you (or your partner) use currently?
    - Oral pills
    - Injectables
    - Male condoms
    - Female condoms
    - Rhythm method/moon beads
    - Withdrawal
    - IUDs
    - Implants
    - Female sterilization (tubal ligation)
    - Male sterilization (vasectomy)
    - Emergency contraception
    - Lactational amenorrhoea (breastfeeding)
    - Traditional/Folk methods
    - I don't use any method

APPENDIX I: MEN'S INTERVIEWS QUESTION SCHEDULE

- In Ugandan culture, what do you think are the roles and duties of a man and woman in a family?
- What do you know about family planning? (prompts: What are the family planning methods you know of? Could you tell me about how to use those methods?)
    - What do you think are the benefits of using family planning?
    - What do you think are the risks of using family planning?

Screening questions:

Are you currently married? If yes, how many wives do you have?

Are you a current family planning user? If yes, inform participant that the following questions about partner involvement refers to his wife/main or long-term partner

- What has your experience using family planning been like so far? (prompts: effectiveness difficulties/problems)
- What motivated you to use start using family planning? (prompts: spacing, family size, financial)
    - What motivates you to keep using family planning?
- Could you tell me about the situations in which you use family planning? (prompts: consistently, on and off, outside marriage)
- What factors influenced your/your partner's choice of method the last time you used contraception? (prompts: availability, convenience, cost)
- Could you describe the decision-making process that led you to use family planning in your relationship? (prompts: How did it make you feel when you/your partner initiated the discussion about family planning? Why did you/your partner make the final decision on using family planning?)
    - Can you describe what responsibility you currently take in family planning use? (prompt: how would you feel about attending family planning counselling with your partner?)

Screening question:

Do you have any casual sexual partners? If yes,

- Could you tell me how family planning decisions are made with your casual partner?
    - What factors influenced your/your partner's choice of method the last time you used contraception? (prompts: availability, convenience, cost)
- Is this different in any way from decisions made with your wife/main or long-term partner?

If no to the above questions, and for both FP users and non-users,

- What are some of the reasons you would not/do not use family planning? (prompts: side effects, costs, inconvenience, religion, socio-cultural norms, negative beliefs/attitudes, lack of access, other people's bad experiences)
- How do you find out about family planning methods? (prompts: community health worker, health clinic, pharmacy, drug store, radio, TV, newspapers)
    - Where would you get trustworthy information about family planning? (prompts: friends, partners, health workers, other men in the community, village leaders)
    - Who would you not ask/trust for information about family planning?

For all participants,

- I'm interested to hear what role you think women should have in family planning. How do you view women who are family planning users? (prompts: empowered, autonomous, promiscuity, infidelity, extramarital affairs)
    - How would you feel if your partner initiated a discussion with you about family planning?
    - How would you feel if your partner asked you to use a condom? (prompts: is condom use in stable relationships associated with family planning or STIs/HIV protection, or both?)
    - If a permanent method of family planning was needed, who do you think should get it (yourself or your partner)? Why?
- What about women taking the initiative to use family planning on their own? (prompts: would it be ok for your partner to decide to use family planning by herself?)
    - How would you feel if your partner was secretly using family planning?
- What are your thoughts about directly involving men in family planning?
    - What does male involvement look like to you in practice?
    - How would you feel about telling your friends that you were using a family planning method? (prompts: comfortable/hesitant/embarrassed)
    - What do you think about the current family planning programs in the community in terms of engaging/reaching/involving you? (prompts: What is being done well? What could be improved?)
    - [If not opposed to male involvement in family planning] How do you think men like yourself could be more involved in family planning? (prompts: What strategies would work to engage you better? Where, when and by who should you be engaged?)
- What do you think are the community's attitudes and beliefs towards family planning?
    - How do these beliefs align with your own?

APPENDIX J: MEN'S INTERVIEWS PARTICIPANT INFORMATION

Participant #	Age	Education	Marital status	Religion	No. of children	Occupation	District	Code
1	27	Senior 4	Married	Christian	1	Guard	Iganga	Urban user
2	33	Postgrad diploma	Single	Muslim	0	Data entrant	Iganga	Urban non user
3	38	Senior 3	Married	Muslim	8	Business	Iganga	Urban user
4	20	Certificate in nursing	Single	Catholic	0	Student	Iganga	Urban non user
5	18	No schooling	Married	Protestant	1	Farmer	Iganga	Urban non user
6	34	Senior 6	Married	Muslim	1	Business	Iganga	Urban user
7	27	Senior 6	Single	Muslim	1	Business	Iganga	Urban non user
8	32	Senior 4	Married	Muslim	4	Business	Iganga	Urban user
9	52	Senior 3	Married	Christian	10	Driver	Iganga	Urban user
10	30	Primary 7	Married	Muslim	0	Motorcycle driver	Iganga	Urban non user
11	37	Senior 4	Married	Muslim	5	Business	Iganga	Urban non user
12	28	Diploma	Single	Catholic	0	Waiter	Iganga	Urban user
1a	37	Primary 7	Married	Protestant	8	Farmer	Nawandala	Rural user
2a	40	No schooling	Married	Muslim	3	Farmer	Nawandala	Rural user
3a	35	Primary 7	Married	Catholic	5	Farmer	Nawandala	Rural user
4a	74	Senior 3	Married	Protestant	11	Farmer	Nawandala	Rural non user
5a	23	Primary 6	Married	Muslim	1	Motorcycle driver	Bugweri	Rural user
6a	30	Primary 7	Married	Muslim	1	Builder	Bugweri	Rural non user
7a	29	Senior 5	Single	Muslim	1	Farmer	Bugweri	Rural non user
8a	39	Primary 5	Married	Muslim	12	Motorcycle driver	Bugweri	Rural user
9a	32	Primary 7	Married	Muslim	5	Business	Nakilulwe	Rural non user
10a	35	Senior 6	Married	Protestant	4	Farmer	Nakilulwe	Rural non user
11a	47	Diploma	Married	Catholic	12	Chairman of the village	Bulamagi	Rural user
12a	32	Senior 6	Married	Anglican	2	Business	Bulamagi	Rural non user

APPENDIX K: FACILITATOR AND TRANSLATOR CONFIDENTIALITY FORMS

UC
UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

FACILITATOR CONFIDENTIALITY AGREEMENT

Thank you for your involvement in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, Nakaziba Sumaya, agree to maintain full confidentiality in regards to any and all verbal information received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during the focus group discussions
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store any audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return any materials to Amrita in a complete and timely manner at the completion of the focus group discussions.
- To delete any electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of the focus group discussions.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information from the focus group discussions and/or any files to which I may have access.

Name (printed) Nakaziba Sumaya

Signature _____

Date 12/02/2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

FACILITATOR CONFIDENTIALITY AGREEMENT

Thank you for your involvement in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, Ezekiel Nwtefe, agree to maintain full confidentiality in regards to any and all verbal information received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during the focus group discussions
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store any audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return any materials to Amrita in a complete and timely manner at the completion of the focus group discussions.
- To delete any electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of the focus group discussions.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information from the focus group discussions and/or any files to which I may have access.

Name (printed) Ezekiel Nwtefe

Signature 

Date 12/02/2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

FACILITATOR CONFIDENTIALITY AGREEMENT

Thank you for your involvement in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, SARAH NAMUTAMBA, agree to maintain full confidentiality in regards to any and all verbal information received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during the focus group discussions
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store any audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return any materials to Amrita in a complete and timely manner at the completion of the focus group discussions.
- To delete any electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of the focus group discussions.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information from the focus group discussions and/or any files to which I may have access.

Name (printed) SARAH NAMUTAMBA

Signature _____

Date 15th FEBRUARY 2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

TRANSLATION CONFIDENTIALITY AGREEMENT

Thank you for your participation in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, Nakazibwe Sumaya, agree to maintain full confidentiality in regards to any and all verbal information and audio recordings received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during translation
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store all audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return all materials to Amrita in a complete and timely manner at the completion of translation.
- To delete all electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of translation.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audio files and/or files to which I will have access.

Name (printed) Nakazibwe Sumaya

Signature _____

Date 12/02/2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

TRANSLATION CONFIDENTIALITY AGREEMENT

Thank you for your participation in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, Kawala Susan, agree to maintain full confidentiality in regards to any and all verbal information and audio recordings received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during translation
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store all audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return all materials to Amrita in a complete and timely manner at the completion of translation.
- To delete all electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of translation.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audio files and/or files to which I will have access.

Name (printed) Kawala Susan

Signature 

Date 15th 02-2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

TRANSLATION CONFIDENTIALITY AGREEMENT

Thank you for your participation in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, SARAH NAMUTAMBA, agree to maintain full confidentiality in regards to any and all verbal information and audio recordings received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during translation
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store all audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return all materials to Amrita in a complete and timely manner at the completion of translation.
- To delete all electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of translation.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audio files and/or files to which I will have access.

Name (printed) SARAH NAMUTAMBA

Signature _____

Date 15TH FEBRUARY 2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

FACILITATOR CONFIDENTIALITY AGREEMENT

Thank you for your involvement in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, NAMUKWANA ESTHER, agree to maintain full confidentiality in regards to any and all verbal information received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during the focus group discussions
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store any audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return any materials to Amrita in a complete and timely manner at the completion of the focus group discussions.
- To delete any electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of the focus group discussions.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information from the focus group discussions and/or any files to which I may have access.

Name (printed) NAMUKWANA ESTHER

Signature [signature]

Date 29/11/2018

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

TRANSLATION CONFIDENTIALITY AGREEMENT

Thank you for your participation in the research project **about addressing the unmet need for contraception in Uganda**. Protecting the confidentiality of the research participants is essential and you are therefore asked to sign the following confidentiality agreement.

I, Kawala Susan, agree to maintain full confidentiality in regards to any and all verbal information and audio recordings received from the research team for the above project. Furthermore, I agree:

- To hold in strictest confidence the identification of any individual and the content of any discussion that may be revealed during translation
- To not make copies of any audio files or computerised files of the translated and transcribed focus groups, unless specifically approved to do so by the Research Team leader Amrita Namasivayam.
- To store all audio files and materials in a password protected computer or safe, secure location as long as they are in my possession.
- To return all materials to Amrita in a complete and timely manner at the completion of translation.
- To delete all electronic files containing study-related documents or audio files from my computer hard drive and any back-up devices on completion of translation.

I am aware that I can be held legally responsible for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audio files and/or files to which I will have access.

Name (printed) Kawala Susan

Signature

Date 5th-12-2018

APPENDIX L: PUBLICATIONS

PLOS ONE

RESEARCH ARTICLE

Improved contraceptive use among women and men in Uganda between 1995-2016: A repeated cross-sectional population study

Amrita Namasivayam[1], Sarah Lovell[1], Sarah Namutamba[2], Philip J. Schluter[1,3]*

1 School of Health Sciences, University of Canterbury—Te Whare Wānanga o Waitaha, Christchurch, New Zealand, **2** Institute of Public Health, Makerere University, Kampala, Uganda, **3** School of Clinical Medicine—Primary Care Clinical Unit, The University of Queensland, Brisbane, Australia

* philip.schluter@canterbury.ac.nz

OPEN ACCESS

Citation: Namasivayam A, Lovell S, Namutamba S, Schluter PJ (2019) Improved contraceptive use among women and men in Uganda between 1995-2016: A repeated cross-sectional population study. PLoS ONE 14(7): e0219963. https://doi.org/10.1371/journal.pone.0219963

Editor: Catherine Suzanne Todd, FHI360, UNITED STATES

Received: February 28, 2019

Accepted: July 6, 2019

Published: July 18, 2019

Data Availability Statement: This paper made use of third party data, and the authors neither collected nor own the data. The Uganda Demographic and Health Surveys (DHS) datasets are available through application for academic research, in the same manner as the authors, via MEASURE DHS (https://dhsprogram.com/data/). The authors have no special privileges that other investigators would not have, in this respect. Academic users wishing to use the data are asked to register on the website and complete a short web form via MEASURE DHS.

Abstract

Background

Research on contraceptive behaviour changes over time in Uganda is scarce, yet it has among the highest fertility and maternal mortality rates of any country in the East African region. Understanding temporal patterns of contraceptive use for both women and men is vital in evaluating the effectiveness of family planning interventions and strategies, and identifying those with the most unmet need. Using repeated nationally representative cross-sectional samples, this study charts the changes in Uganda's population-based contraceptive use over recent years.

Methods

Five Demographic and Health Survey datasets for Uganda over 21 years, from 1995 to 2016, were sourced and interrogated. Eligible participants included all women aged 15–49 years and men aged 15–54 years. Responses to questions on modern and any (modern or traditional) contraceptive use were analysed. Stratified by gender, weighted regression analyses were employed to detect change over time. The patterns associated with key demographic variables were also investigated.

Results

Overall, 50,027 women and 14,092 men were included within the study. In 2016, 30.3% of women and 39.9% of men were using any contraceptive method, a significant non-linear increase from 13.4% of women and 20.3% of men in 1995. Furthermore, 27.3% of women and 35.9% of men were using modern contraceptive methods in 2016, an increase from 7.4% of women and 10.4% of men in 1995. All considered demographic variables were significantly associated with contraceptive use for both women and men (all $P<0.001$); and for women, all variables differentially changed over time (all $P<0.001$).

Funding: Amrita Namasivayam received a University of Canterbury Doctoral Scholarship (https://www.canterbury.ac.nz/scholarshipsearch/ScholarshipDetails.aspx?ScholarshipID=6935.127. The funder had no role in the design and conduct of the study, management, analyses, interpretation of the results or in the preparation, review or approval of the manuscript. No other funding was received for this work.

Competing interests: The authors have declared that no competing interests exist.

Conclusion

This study showed a significant increase and dynamism across key demographic variables in contraceptive uptake by both women and men. Sustained family planning programs and interventions have successfully resulted in behaviour change across the Ugandan population. However, continued efforts are needed to further reduce Uganda's relatively high fertility and associated maternal mortality rates.

Introduction

Contraception, or family planning, allows women, men and couples to choose if and when to have children by way of voluntarily and intentionally delaying, spacing or limiting pregnancies [1]. Thus, contraception has been, and continues to be, a key focus of the global agenda for maternal health. Access to and use of contraception by women and men can improve the health, economic, and social domains of their lives [2]. Spacing or limiting pregnancies allows for improved health outcomes for a mother and her child, together with better financial and resource management resulting from smaller, healthier families, and reduced child care demands [3]. Delayed childbearing increases a woman's likelihood of higher educational attainment, and better employment prospects, a higher level of financial independence and empowerment, as well as reducing the risks and complications associated with early pregnancies [2, 3]. Contraceptive use also prevents or reduces the likelihood of high-risk and unintended pregnancies, which can lead to unsafe abortions and adverse maternal health outcomes. Despite the successes and advances thus far, estimates for the number of women in developing regions who have an unmet need for contraception (those who are sexually active and want to avoid, space or limit pregnancies, but who are not using modern contraception methods) stood at 214 million in 2017 [2].

Uganda has one of the highest fertility and maternal mortality rates in the East African region, estimated at 5.4 births per woman in 2016 [4] and 343 maternal deaths per 100,000 live births in 2015 [5], respectively. Taken together, these figures underscore the high maternal health burden faced by Ugandan women of reproductive age [2]. Uganda also consistently has one of the lowest contraceptive use prevalence rates among East African countries [6]. It was estimated that only 39% of married women of reproductive age used contraception in 2016 [7]. Consequently, Ugandan women frequently report having more children than they desired, and short intervals between pregnancies [8]. This places both the health of the mother and her newborn child at risk, as well as economically impacting larger families by straining financial resources, and reducing access to education and healthcare [3].

Although Uganda has seen many directed initiatives and improvements in the distribution provision, access and uptake of contraceptive services over the last decade, particularly in community-based distribution [9] and the use of injectable methods [10], unmet need remains unacceptably high [8]. Currently, a combination of public, private and non-governmental organizations (NGOs), sometimes referred to as implementing partners (IPs), deliver family planning services to urban and rural populations [11]. Different IPs operate and partner in various capacities based on region and role; some engage in direct service provision and/or provide mobile outreach services, while others partner with local clinics to supply and fund contraceptive services. These services are usually provided free of charge, or at a nominal cost in private clinics, but travel and waiting times may be long [12], and availability limited [13]. Other IPs provide training in family planning counselling and service provision of short-term

methods (such as: condoms, pills, and injectables) for village health teams and community health workers, who serve as the first tier of healthcare access for many communities [14].

Previous studies in Uganda have been predominantly qualitative in nature, focusing on factors influencing contraceptive use, and barriers contributing to unmet need among women; see, for example [12, 15, 16]. Few, if any, quantitative studies have considered men and their contraceptive use in Uganda, despite the acknowledged need for such information [17]. In the context of reproductive health and contraception, men need to be considered as they are not only women's partners, but individuals with distinct reproductive histories and desires of their own. In many societies, men are key decision-makers but often not directly involved in contraceptive discussions or programs [18]. Men's attitudes and behaviours around contraceptive use thus directly impact fertility and maternal mortality rates. Tracking the temporal patterns of contraceptive use for both women and men is critical to understand the success of initiatives aimed at improving their use and to inform future health promotion policies in Uganda. To date, such epidemiological studies have not been forthcoming.

This study analyses changes in contraceptive use among women and men of reproductive age in Uganda, using five representative Uganda Demographic and Health Surveys (DHS) datasets. The primary aim is to describe patterns in any and modern contraceptive use among women aged 15–49 years and men aged 15–54 years for 21 years, from 1995 to 2016. The secondary aim is to investigate these patterns over a set of purposefully selected key demographic factors, namely: age, education, place of residence, and region.

Materials and methods

Study design and setting

A repeated, nationally representative, cross-sectional population study of women and men of reproductive age in Uganda, using a stratified (urban/rural) two-stage cluster design.

Participants

All women aged 15–49 years who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. In one-third of the sampled households, all men aged 15–54 years, including both usual residents and visitors who stayed in the household the night before the interview, were also eligible for individual interviews. Data for women and men were collected across all surveys using the standardized DHS women's and men's questionnaires, respectively.

Primary variables

The DHS definition of unmet need for contraception was employed, referring to women who "(i) are not pregnant and not postpartum amenorrhoeic and are considered fecund and want to postpone their next birth for two or more years or stop childbearing altogether but are not using a contraceptive method, or (ii) have a mistimed or unwanted current pregnancy, or (iii) are postpartum amenorrhoeic and their last birth in the last two years was mistimed or unwanted" [4]. The two principle outcome variables in this study were '*Any contraceptive use*' and '*Modern contraceptive use*'. These were elicited and presented separately for women and men. Based on responses to the question "Are you or your partner currently doing something or using any method to delay or avoid getting pregnant?", and "If yes, which method are you using?", the DHS variable 'contraceptive use and intention' had already been created within all of the DHS datasets. The variable 'Any contraceptive use' was then created based on responses to this DHS variable 'contraceptive use and intention'; responses were dichotomized into Yes

(uses a modern or traditional method), and No (not using a method but intends to use later, does not intend to use, never had sex). For 'modern contraceptive use', responses for the same variable were dichotomized into Yes (uses a modern method), and No (uses a traditional method, not using a method but intends to use later, does not intend to use, never had sex). Modern methods referred to any of the following: female sterilization, male sterilization, oral contraceptive pills, the intrauterine contraceptive device (IUD), injectables, implants, male and/or female condoms, diaphragms, contraceptive foam and contraceptive jelly, and lactational amenorrhea method (LAM), and other modern contraceptive methods (including cervical cap, contraceptive sponge, and others). Traditional methods referred to periodic abstinence (rhythm/ calendar method), or withdrawal. Any contraceptive use refers to any specific method (modern or traditional), including female sterilization. Women's and men's responses to any or modern contraceptive use included methods used by their partner, as well as methods requiring couple negotiation (such as condom use or abstinence).

Selected key demographic variables

Age grouping, education level, place of residence and region of residence were all purposefully selected as being key factors associated with contraceptive use, and important in charting its change over time. Here, age was grouped as 15–19, 20–24, 25–34, 35–39, and ≥40 years; highest educational attainment (attendance) was classified into no education, primary, secondary or higher; place of residence was dichotomized into urban and rural; while region of residence was defined by North, West, East, and Central geographic locations.

Procedure

This study utilized data from the DHS, which are nationally representative population-based surveys. These repeated, country-wide cross-sectional surveys are commissioned by the United States Agency for International Development (USAID) and periodically carried out by the governments of different countries, with operational support from ICF International. Datasets are available through application to MEASURE DHS (https://dhsprogram.com/data/).

The DHS employ a stratified (urban/rural) two-stage cluster design. The first stage involves enumeration areas (EAs) initially being randomly selected from the most recent population census sample frame; each EA covers a geographic area with an average of 130 households. The second stage involves the systematic selection of households from the EAs. The surveys use standardized questionnaires developed by the MEASURE DHS program specifically for women, men and households; these are administered during face-to-face interviews. Detailed information about sampling methodologies and data collection procedures can be found from the MEASURE DHS webpage (https://dhsprogram.com/data/), or DHS reports for respective countries [19].

Statistical methods

Analyses were undertaken separately on the women's and men's datasets. Reporting of analyses were informed by the STROBE guidelines (www.strobe-statement.org) [20]. Unweighted frequencies were reported, together with associated weighted percentages. Weighting accounted for the stratified two-stage cluster design to provide population estimates. A time variable was calculated for the years since 1995 (the baseline year). For the primary objective, first (time) and second ($time^2$) order weighted quadratic regressions were employed to model the rate of change in contraceptive use over the study period. The statistical superiority of the quadratic regression model over its linear counterpart was assessed via the log-likelihood test, using unweighted data. For the secondary objective, weighted logistic regression models were

employed for each key demographic variable. For each variable, the main effect and time interaction terms were introduced together within the model, along with the time and time^2 variables. Suppose the independent variable of interest is labelled "X" and the contraceptive use outcome of interest is labelled "Y", this implies that the logistic regression takes the form:

$$logit(Y) = intercept + \beta_1 \times time + \beta_2 \times time^2 + \beta_3 \times X + \beta_4 \times X \times time$$

so that β_3 gives the estimate of the main effect and β_4 gives the time interaction term. Measures of association were presented as odds ratios (ORs) and 95% confidence intervals (CIs). Analyses and graphing were undertaken using specialist statistical software Stata SE version 15.1 (StataCorp, College Station, TX, USA), and significance was defined by $\alpha = 0.05$.

Ethical considerations

Data collection questionnaires and processes for the DHS surveys are reviewed and approved by the ICF Institutional Review Board (IRB). Additionally, country-specific DHS survey protocols are reviewed by the ICF IRB and by an IRB in the host country. As a part of the DHS survey methodology and ethics process, informed consent is obtained from all participants prior to their participation in the survey, and the collection of information is done confidentially. The datasets used did not carry any personal identifiable information and permission to use them were obtained from MEASURE DHS. Once a data request has been approved, no further ethical clearance is required from the ICF IRB. The study complied with the ethical standards for human experimentation as established by the Helsinki Declaration and New Zealand's Health and Disability Ethics Committee (HDEC). HDEC defined this study as minimal risk observational research and it did not require ethics committee review. All methods and reporting were performed in accordance with HDEC's relevant guidelines and regulations.

Results

Participants

Individual data were elicited from 7,070 women in 1995, 7,246 in 2000/2001, 8,531 in 2006, 8,674 in 2011, and 18,506 women in 2016, totalling 50,027 women overall. Similarly, individual data were collected from 1,996 men in 1995, 1,962 in 2000/2001, 2,503 in 2006, 2,295 in 2011, and 5,336 men in 2016, totalling 14,092 men altogether. Response rates varied across the years from 93.8% (2011) to 97.0% (2016) for women, and from 85.1% (2000/2001) to 90.7% (2006) for men. For all participants across all years, the response rates were higher in rural areas. The main reason cited by the DHS final survey reports for non-response was the failure to find the eligible participants in their homes, despite repeated visits to the household.

Demographic characteristics

The characteristics of women and men between 1995 and 2016 for the selected key demographic variables in this study appears in Tables A-D in S1 File. Among women across all years of the study (Tables A and B in S1 File), the largest proportion of respondents were aged 15–19 years, had attained primary education, and resided in rural areas.

Among men across all years of the study (Tables C and D in S1 File), ages were more evenly spread over the different groups compared to the corresponding distribution for women. Similar to women, the majority of men had attained at least primary education; although compared to women, a larger proportion of men attained a secondary education or higher.

Contraceptive use over time

In 2016, 30.3% of women, and 39.9% of men of reproductive age in Uganda were using any contraceptive methods, an increase from 13.4% of women and 20.3% of men in 1995. Furthermore, 27.3% of women and 35.9% of men were using a modern method of contraception in 2016, an increase from 7.4% and 10.4%, respectively, in 1995. Fig 1 depicts contraceptive use among women and men in Uganda across the study period. Non-linear increases in any and modern contraceptive use patterns are suggested in Fig 1, both for women and men.

Weighted quadratic regression analyses confirmed these non-linear increases in any and modern contraceptive use over time. Table 1 gives the estimated coefficients and associated 95% CIs derived from these analyses, together with the level of significance for each term. For any contraceptive use, the quadratic model was significantly better than its linear counterpart for both women ($P<0.001$) and men ($P<0.001$), demonstrating rapid, non-linear increases over the study period. For women, the predicted rate of any contraceptive use was given by $0.147 + 0.0035\times(\text{year}-1995) + 1.7\text{E-}4\times(\text{year}-1995)^2$. For men, the predicted rate of any contraceptive use was given by $0.213 - 0.0031\times(\text{year}-1995) + 5.6\text{E-}4\times(\text{year}-1995)^2$. Similarly, for modern contraceptive use, the quadratic model was significantly better than its linear counterpart for both women ($P<0.001$) and men ($P<0.001$), also demonstrating rapid, non-linear increases over the study period. Here, the predicted rate for women was $0.090 + 0.0062\times(\text{year}-1995) + 1.1\text{E-}4\times(\text{year}-1995)^2$, whereas for men the predicted rate was given by $0.116 + 0.0053\times(\text{year}-1995) + 2.9\text{E-}4\times(\text{year}-1995)^2$.

Women's contraceptive use over time by key demographic variables

Among women using either any method, or specifically a modern method of contraception, the largest proportion of users were between the ages of 30–34 and 35–39 years (for the years 1995-2000/2001, and 2011), and 25–29 and 30–34 years (for the years 2006 and 2016) (Tables A and B in S1 File); those with a secondary education or higher; those living in an urban area; and women living in the Central region of the country. Conversely, across all the study years, women aged 15–19 years had the lowest proportion of contraceptive use, as did women with no education and those living in a rural area.

Each of the key demographic variables were separately related to any and modern contraceptive use by women in logistic regression models. All variables, and their interactions over time, were significantly associated with contraceptive use after adjusting for the time and time^2 changes (all $P<0.001$) (Table 2). This implies that the significant difference in the likelihood of contraceptive use within each demographic variable observed at baseline (1995) also significantly changed over time (Figs 2 and 3). Considering any contraceptive use by educational attainment groupings, women with a secondary or higher educational attainment had odds 5.84 greater of using contraception than those without any education at baseline (1995); see Table 2. However, this gap narrows over time–seen by the interaction term <1.0 (in Table 2) and the lines converging in Fig 2. By 2016, the estimated odds of any contraceptive use for women with secondary or higher educational attainment was $\exp(\ln(5.84) + \ln(0.94)\times(2016-1995)) = 1.59$ greater than that of women without any education, after accounting for the general non-linear increase in any contraceptive use over time. This implies that over the 21 year period, women without any education have had a relatively faster contraceptive use uptake than more educated women (although their actual usage still lagged behind).

Men's contraceptive use over time by key demographic variables

Among male users of any method of contraception, the largest proportion of users in 1995 were between the ages of 30–34 and 35–39 years. This gradually changed over time to men

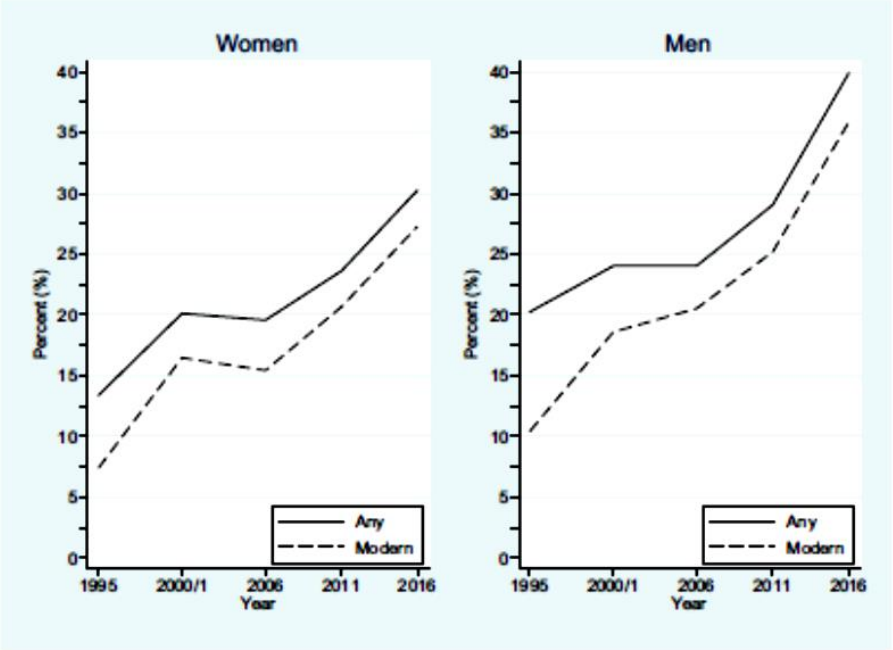

Fig 1. Changes in any and modern contraceptive use among women and men in Uganda across the study period (1995–2016).

https://doi.org/10.1371/journal.pone.0219963.g001

aged 20–24 and 25–29 years being the largest user groups in 2011 and 2016 (Table C in S1 File). As with women, men with a secondary education or higher, living in an urban area, and within the Central region of the country comprised the largest proportion of users of any contraceptive method. For modern contraceptive use across the study period, men aged 20–24

Table 1. Estimates together with associated 95% CIs for regression models of any and modern contraceptive use among women and men in Uganda over the years 1995 to 2016.

		Base year	Years since 1995			
		(1995)†	Linear term		Quadratic term	
Contraceptive use		est.	est.	(95% CI)	est.	(95% CI)
Women						
	Any	0.147	0.0035	(0.0007, 0.0062)*	1.7E-4	(5.9E-5, 3.0E-4)**
	Modern	0.090	0.0062	(0.0038, 0.0086)***	1.1E-4	(2.6E-7, 2.2E-4)*
Men						
	Any	0.213	-0.0031	(-0.0076, 0.0014)	5.6E-4	(3.6E-4, 7.6E-4)***
	Modern	0.116	0.0053	(0.0014, 0.0092)**	2.9E-4	(1.0E-4, 4.7E-4)**

Note:

†first year of the study period; E denotes times 10 to the power of (e.g.: 1.7E-4 is 1.7×10^{-4} which is 0.00017); level of significance denoted by

* $P<0.05$

** $P<0.01$

*** $P<0.001$.

https://doi.org/10.1371/journal.pone.0219963.t001

Table 2. OR together with associated 95% CIs of using any and modern contraceptive method for women and men in Uganda over the years 1995–2016.

		Women				Men			
		Main effect		Time interaction		Main effect		Time interaction	
Contraceptive use		**OR**	**(95% CI)**	**OR**	**(95% CI)**	**OR**	**(95% CI)**	**OR**	**(95% CI)**
Any contraception									
Age (years)			*P*<0.001		*P*<0.001		*P*<0.001		*P* = 0.42
	15–19	1	(reference)			1	(reference)		
	20–24	2.16	(1.75, 2.66)	1.03	(1.02, 1.05)	3.51	(2.60, 4.72)	0.99	(0.98, 1.02)
	25–29	2.27	(1.84, 2.81)	1.05	(1.04, 1.07)	2.99	(2.15, 4.16)	1.00	(0.98, 1.02)
	30–34	2.98	(2.43, 3.65)	1.04	(1.02, 1.05)	3.66	(2.47, 5.41)	0.99	(0.96, 1.01)
	35–39	2.60	(2.07, 3.26)	1.04	(1.03, 1.06)	3.34	(2.39, 4.68)	0.99	(0.96, 1.01)
	≥40	2.04	(1.65, 2.51)	1.04	(1.03, 1.05)	2.73	(1.96, 3.81)	1.00	(0.98, 1.02)
Highest educational attainment			*P*<0.001		*P*<0.001		*P*<0.001		*P* = 0.41
	None	1	(reference)			1	(reference)		
	Primary	1.90	(1.59, 2.27)	0.98	(0.97, 1.00)	1.97	(1.29, 3.00)	1.00	(0.97, 1.02)
	Secondary or higher	5.84	(4.77, 7.14)	0.94	(0.93, 0.96)	4.63	(3.02, 7.11)	0.99	(0.96, 1.02)
Place of residence			*P*<0.001		*P*<0.001		*P*<0.001		*P*<0.001
	Urban	1	(reference)			1	(reference)		
	Rural	0.29	(0.25, 0.34)	1.05	(1.04, 1.06)	0.31	(0.25, 0.38)	1.03	(1.02, 1.05)
Region			*P*<0.001		*P*<0.001		*P*<0.001		*P* = 0.004
	Central	1	(reference)			1	(reference)		
	East	0.38	(0.30, 0.47)	1.04	(1.02, 1.05)	0.58	(0.43, 0.77)	1.01	(0.99, 1.02)
	North	0.37	(0.29, 0.47)	1.01	(1.00, 1.03)	0.55	(0.40, 0.76)	1.01	(0.99, 1.03)
	West	0.32	(0.25, 0.41)	1.05	(1.03, 1.06)	0.37	(0.27, 0.50)	1.03	(1.01, 1.05)
Modern contraception									
Age (years)			*P*<0.001		*P*<0.001		*P*<0.001		*P* = 0.76
	15–19	1	(reference)			1	(reference)		
	20–24	2.16	(0.75, 2.66)	1.03	(1.02, 1.04)	2.97	(2.11, 4.17)	1.00	(0.98, 1.02)
	25–29	2.51	(2.00, 3.13)	1.04	(1.03, 1.06)	2.21	(1.54, 3.18)	1.01	(0.99, 1.04)
	30–34	2.94	(2.35, 3.68)	1.03	(1.02, 1.05)	2.17	(1.48, 3.17)	1.00	(0.98, 1.02)
	35–39	2.77	(2.15, 3.57)	1.04	(1.02, 1.05)	2.09	(1.43, 3.06)	1.00	(0.98, 1.03)
	≥40	1.86	(1.44, 2.40)	1.04	(1.02, 1.05)	1.80	(1.25, 2.58)	1.01	(0.99, 1.03)
Highest educational attainment			*P*<0.001		*P*<0.001		*P*<0.001		*P*<0.001
	None	1	(reference)			1	(reference)		
	Primary	2.50	(2.03, 3.10)	0.97	(0.96, 0.98)	2.40	(1.36, 4.25)	0.99	(0.95, 1.02)
	Secondary or higher	8.66	(6.87, 10.92)	0.92	(0.91, 0.94)	8.22	(4.62, 14.62)	0.96	(0.92, 0.99)
Place of residence			*P*<0.001		*P*<0.001		*P*<0.001		*P*<0.001
	Urban	1	(reference)			1	(reference)		
	Rural	0.20	(0.16, 0.24)	1.07	(0.06, 1.08)	0.19	(0.15, 0.25)	1.06	(1.04, 1.08)
Region			*P*<0.001		*P*<0.001		*P*<0.001		*P*<0.001
	Central	1	(reference)			1	(reference)		
	East	0.30	(0.23, 0.38)	1.05	(1.04, 1.07)	0.39	(0.28, 0.54)	1.03	(1.00, 1.05)
	North	0.19	(0.14, 0.26)	1.05	(1.03, 1.07)	0.14	(0.09, 0.22)	1.08	(1.05, 1.11)
	West	0.28	(0.21, 0.36)	1.06	(1.04, 1.07)	0.23	(0.16, 0.34)	1.05	(1.03, 1.08)

https://doi.org/10.1371/journal.pone.0219963.t002

years remained the largest user group by age. Similar to the use of any contraceptive method, men with a secondary education or higher, living in an urban area and within the Central region of the country were the largest user groups of modern contraceptives.

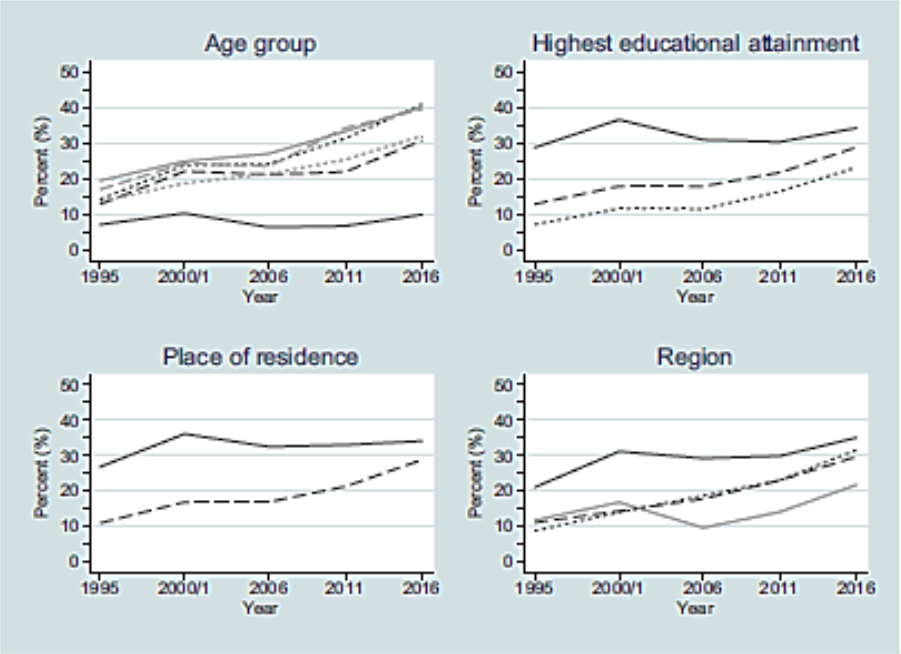

Fig 2. Changes in any contraceptive use among women in Uganda across the study period (1995–2016), partitioned by the considered demographic variables. Key: age group (years): 15–19 (black/solid); 20–24 (black/dash); 25–29 (black/dot); 30–34 (grey/solid); 35–39 (grey/dash); ≥40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

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Table 2 also shows the logistic regression model results for men. Similar to women, the main effect terms were significant for all the considered variables in any contraceptive and modern contraceptive use models (all $P<0.001$). However, unlike women, there was no significant interaction over time for any contraceptive use among men grouped by age ($P = 0.42$) or highest educational attainment ($P = 0.41$) or for modern contraceptive use by age ($P = 0.76$). This implies that the significant differences observed at baseline were largely preserved over time for these variables (Figs 4 and 5). Considering any contraceptive use by educational attainment groupings, men with secondary or higher educational attainment had odds 4.63 greater of using any contraception than those without any education at baseline (1995) (Table 2). By 2016, the estimated odds of any contraceptive use for men with secondary or higher educational attainment was $\exp(\ln(4.63) + \ln(0.99)\times(2016–1995)) = 3.75$ greater than that for men without any education, after accounting for the general non-linear increase in any contraceptive use over time. Although less, this estimated OR was non-significantly smaller–and there was little convergence seen between the associated lines in Fig 4.

Discussion

In this first epidemiological study of its kind, it was demonstrated that both any and modern contraceptive use among women and men has significantly increased over time in Uganda and, particularly noteworthy, that the rate of change of contraceptive use has accelerated in latter years compared to earlier years. This non-linear increase in latter years may be partially

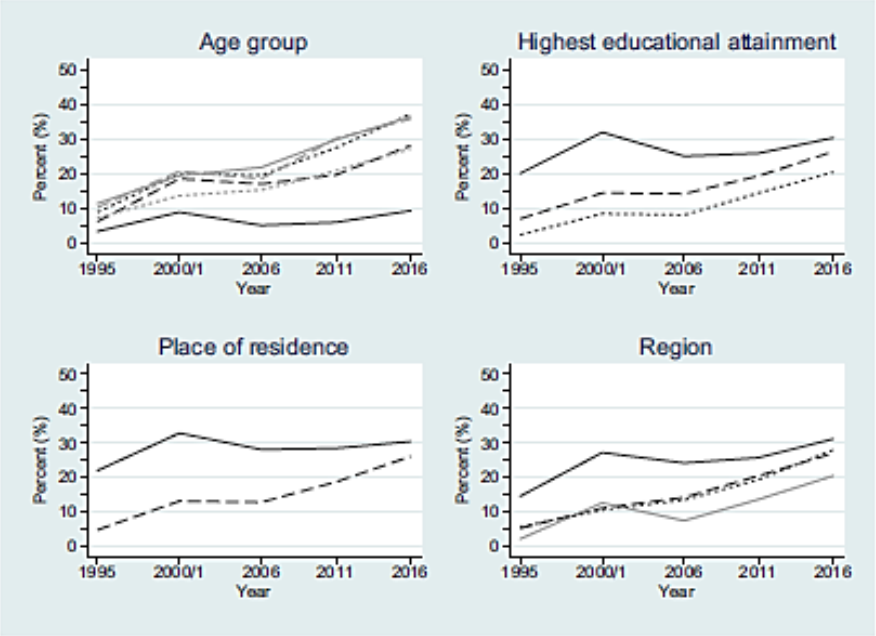

Fig 3. Changes in modern contraceptive use among women in Uganda across the study period (1995–2016). Key: age group (years): 15–19 (black/solid); 20–24 (black/dash); 25–29 (black/dot); 30–34 (grey/solid); 35–39 (grey/dash); ≥ 40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

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explained by the end of the war between the Ugandan government and the Lords' Resistance Army in 2006, and the resumption and restoration of the country's healthcare system and services [21].

The more recent and rapid increase in both women and men's contraceptive use has important implications. Though men's reported contraceptive use also includes methods used by their partners, the increase in the percentage of men using condoms, together with a corresponding decrease in the percentage of men's contraceptive non-use over the study period, is significant. This is particularly so, given that condom use has been largely associated with HIV prevention and protection efforts in the past [22], and is still more commonly linked with casual sexual relationships rather than monogamous partnerships [23]. However, as previous research on male attitudes toward contraception have shown, communication and educational campaigns via mass media and community-led initiatives can significantly increase contraceptive use, including condom use [24]. Given the increased outreach and programmatic efforts around family planning in Uganda in recent years, these increases seen among men likely reflect a shift in attitudes and receptivity towards contraceptive use. It is also important to acknowledge the continued and widespread covert contraceptive use among women in Uganda; in many instances, men may not even be aware of their partners' use of contraceptives [25]. Therefore, the figures for men's contraceptive use in this study speak directly to their own awareness and choice to use contraception within their sexual relationships.

Although men's participation in the family planning process has been recognized as being critical to its effectiveness, traditional gender norms and perceptions often dictate that

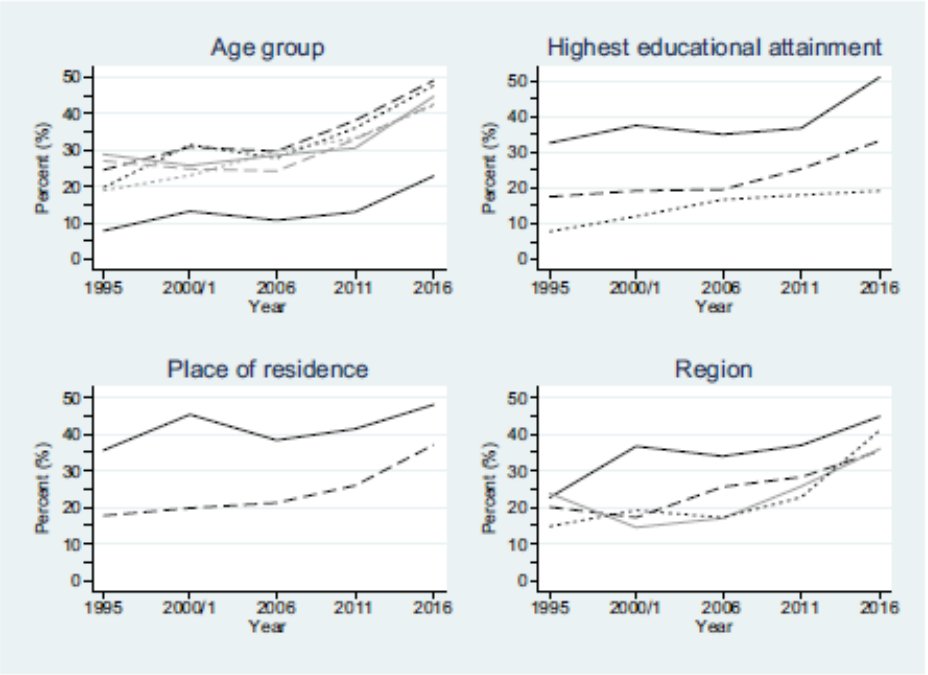

Fig 4. Changes in any contraceptive use among men in Uganda across the study period (1995–2016), partitioned by the considered demographic variables. Key: age group (years): 15–19 (black/solid); 20–24 (black/dash); 25–29 (black/dot); 30–34 (grey/solid); 35–39 (grey/dash); ≥40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

https://doi.org/10.1371/journal.pone.0219963.g004

pregnancy, family planning and reproductive health are a woman's 'domain' or 'business', and thereby exclude men's involvement in the process [15, 18, 25]. Yet, partner opposition is often a significant predictor of poor healthcare access, unmet need for contraception, the use of traditional rather than modern methods, and clandestine use of contraception [25–28]. The largely patriarchal nature of Ugandan society and gender norms around male-dominant, normative decision-making processes, as well as the lack of spousal communication on fertility preference, and the timing and spacing of pregnancies [18, 27, 29, 30] often results in men making decisions about contraception without much discussion or consultation with their partners [26, 31–33]. Contraceptive use has been shown to be higher in communities where women have more autonomy and decision-making power [34], and where spousal communication takes place, whether direct or indirect [26].

The structural limitations of some family planning programs further exacerbate the gendered differences health service use; for example, providers being female, men not feeling welcome or comfortable, and a lack of trust for providers and not being assured of their confidentiality during discussions about family planning, often result in men not participating at all [25, 35]. Similarly, campaigns around family planning often target women [15]. Given that relatively few studies have previously looked at contraceptive use among men in Uganda, and the focus of these studies have largely been on barriers to male involvement, the results presented here are very encouraging, indicating the success of, and support for current efforts to improve male involvement in family planning and reproductive health.

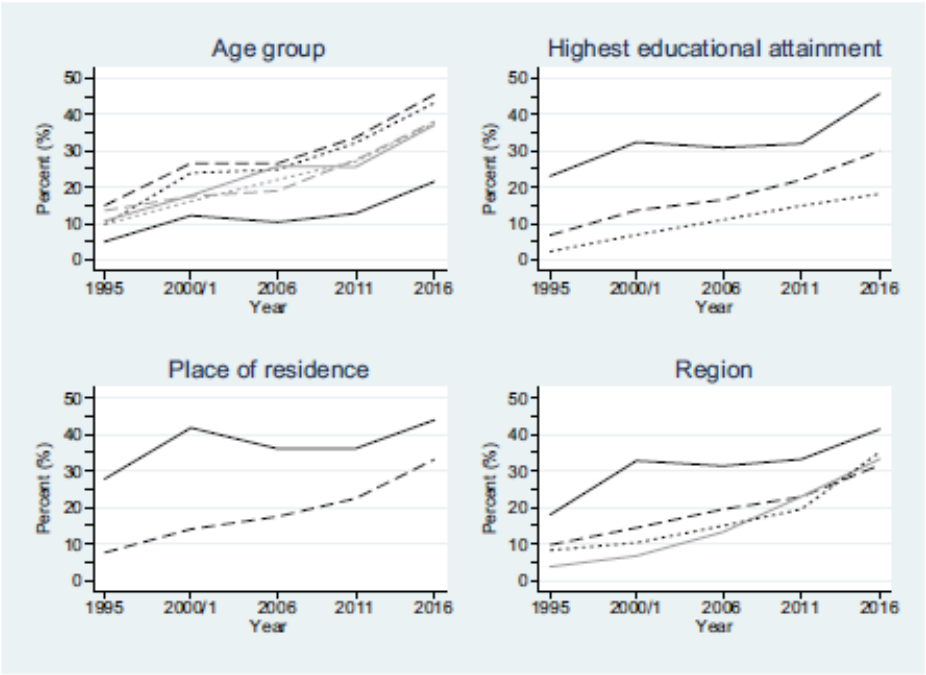

Fig 5. Changes in modern contraceptive use among men in Uganda across the study period (1995–2016). Key: age group (years): 15–19 (black/solid); 20–24 (black/dash); 25–29 (black/dot); 30–34 (grey/solid); 35–39 (grey/dash); ≥40 (grey/dot); highest educational attainment: secondary and higher (solid); primary (dash); none (dot); place of residence: urban (solid); rural (dash); and region: Central (black/solid); East (dash); West (dot); North (grey/solid).

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The changes in contraceptive use associated with the different demographic variables for women and men across the study period also point to important differential shifts in behaviour within the population at large. The changes observed among the groupings by educational level and place of residence are of particular note. The relatively steeper increase in contraceptive uptake seen among women and men with no education, along with those with only a primary education, compared to those with a secondary education or higher may reflect the success of these family planning programs in effectively reaching lower educated populations [36]. However, it must also be noted that these population's baseline contraceptive usage rates were substantially less than their more educated counterparts and still remained so by the study's end date. In terms of place of residence, given that the majority of Uganda's population is rural and at times very hard to reach [37], accessibility to reproductive health services is often challenging [12, 13]. Community health workers and village health teams are often the critical first touchpoint in these settings, providing services such as family planning counselling and at times, short-term family planning methods [38]. These increases in contraceptive may reflect the success of family planning initiatives and outreach programs effectively reaching these rural and remote communities.

The temporary decrease in contraceptive use seen in the data for both women and men in 2006 is likely to be a result of the end of the long-standing war in Uganda in the same year, and the subsequent suspension and withdrawal of humanitarian aid from the country. A secondary contributing factor to the observed decrease in contraceptive use in 2006 could also have been the shift in focus of HIV prevention campaigns, from the Abstinence-Be Faithful-Condom use

(ABC) approach, to predominantly abstinence [22]. In the early and mid-2000s, many HIV/AIDs campaign efforts and prevention programs also withdrew from Uganda, due to the country's rapid HIV prevalence decline in the early 1990s [39]. The intensity of the promotion and distribution of condoms, which was a large component of these campaigns, therefore likely decreased or slowed temporarily, before the country's public healthcare system resumed these efforts as a continuing aspect of reproductive health programs.

Strengths and limitations

The utilization of large, nationally representative datasets lends robustness to the results, as does the repeated, cross-sectional study design, using variables that were consistently measured using the same questionnaires and sampling techniques across the study period. Another strength of this study is the investigation of contraceptive use among men, a largely understudied population. Women and men are both important players in understanding and improving contraceptive use by, and for, each other. The study is also novel in following the changes in contraceptive use among women and men for purposefully selected variables. This allows the impact of initiatives on those most at need to be assessed, and inform health policy decision-makers about groups at high risk of not using contraception.

While the study has these salient strengths, it also has weaknesses. Data collected for all the variables were self-reported, hence subject to recall bias and response bias, and the psychometric properties of the tools were not readily available. While the DHS response rates were relatively good, ranging from 85.1% to 97.0%, those who did not participate are likely to have lower contraceptive use and poorer health-seeking behaviours than those who did participate. This may over-inflate the usage estimates reported within. Moreover, the geographical regions were consistent across the study years, except in 1995, where the Kitgum district was not included; in 2000/2001, where the districts of Kasese and Bundibugyo in the Western Region and Gulu and Kitgum in the Northern Region were excluded (due to access issues around security at the time); and in 2006, where parts of the northern region were oversampled in order to provide estimates for two areas of interest: Karamoja and internally displaced persons camps. In 2016, three additional land areas in greater Kampala, as well as islands and mountain regions were included. Given that the combined population of these districts corresponded to <5% of the total Ugandan population at each of the respective time points, the sampling bias associated with the inclusion/exclusion of these districts is likely to be negligible. Finally, it must also be emphasised that the results presented in this paper can only be applied to the study period between 1995 and 2016. Contraceptive usage rates should not be extrapolated to years outside this study period as it is unlikely that the observed non-linear patterns would continue beyond this timeframe.

Conclusions

The findings from this study point to the success of family planning programs and interventions in Uganda that have resulted in important population behaviour change. This empirical evidence also serves to inform future reproductive health programs and policies, aligning with the Uganda Family Planning Costed Implementation Plan 2015–2020. This study shows a significant increase and dynamism across key demographic variables in contraceptive use and uptake by both women and men. Consequently, to better understand the predictors of current contraceptive use in Uganda, as well as their associated effect sizes and impact, updated epidemiological modelling is necessary–as past models are no longer likely to provide a valid representation. The findings contained herein, together with any further such epidemiological investigations, are vital in evaluating the past and informing future evidence-based strategies

and directions of family planning programs and initiatives. Ultimately, it is hoped that these results will aid in reducing Ugandan women's unacceptably high maternal health burden.

Supporting information

S1 File. Tables A-D.
(DOCX)

Acknowledgments

The authors are grateful to MEASURE DHS for timely assistance and access to the various Uganda datasets used within. The authors also wish to acknowledge the support of Pat Coope in assisting the team with statistical software issues, and the ground support from local researchers and community members in Iganga, Uganda, whose insight and wisdom into Ugandan culture and norms were invaluable.

Author Contributions

Conceptualization: Amrita Namasivayam, Philip J. Schluter.

Data curation: Amrita Namasivayam.

Formal analysis: Amrita Namasivayam, Philip J. Schluter.

Methodology: Amrita Namasivayam, Sarah Lovell, Philip J. Schluter.

Project administration: Amrita Namasivayam.

Supervision: Sarah Lovell, Philip J. Schluter.

Writing – original draft: Amrita Namasivayam.

Writing – review & editing: Amrita Namasivayam, Sarah Lovell, Sarah Namutamba, Philip J. Schluter.

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BMJ Open

Predictors of modern contraceptive use among women and men in Uganda: a population-level analysis

Amrita Namasivayam ,[1] Sarah Lovell,[1] Sarah Namutamba,[2] Philip J Schluter [1,3]

To cite: Namasivayam A, Lovell S, Namutamba S, *et al*. Predictors of modern contraceptive use among women and men in Uganda: a population-level analysis. *BMJ Open* 2020;**10**:e034675. doi:10.1136/bmjopen-2019-034675

► Prepublication history and additional material for this paper are available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2019-034675).

Received 09 October 2019
Revised 29 January 2020
Accepted 10 February 2020

[1]School of Health Sciences, University of Canterbury, Christchurch, Canterbury, New Zealand
[2]School of Public Health, Makerere University, Kampala, Uganda
[3]School of Nursing, Midwifery and Social Work, University of Queensland, Brisbane, Queensland, Australia

Correspondence to
Amrita Namasivayam;
amrita.namasivayam@pg.canterbury.ac.nz

ABSTRACT

Objective(s) Despite substantial and rapid improvements in contraceptive uptake in Uganda, many women continue to have unmet need for contraception. As factors affecting contraceptive use are dynamic and complex, this study seeks to identify current predictors and provide effect size estimates of contraceptive use among women and men in Uganda.

Study design A nationally representative cross-sectional population survey, using secondary data from Uganda's 2016 Demographic and Health Survey. Stratified by sex, weighted bivariable and multivariable logistic regression models were derived from a suite of potential predictor variables. Predictive abilities were assessed via 10-fold cross-validated area under the receiver operating characteristic curves (AUCs).

Setting Uganda.

Participants All women aged 15–49 years who were permanent residents of the selected households or stayed in the household the night before the survey were eligible to participate. In one-third of the sampled households, all men aged 15–54 years who met the same residence criteria were also eligible.

Primary outcome measures Modern contraceptive use.

Results Overall, 4914 (26.6%) women and 1897 (35.6%) men reported using a modern contraceptive method. For women and men, both demographic and proximate variables were significantly associated with contraceptive use, although notable differences in effect sizes existed between sexes—especially for age, level of education and parity. Predictively, the multivariable model was acceptable for women with AUC=0.714 (95% CI 0.704 to 0.720) but less so for men with AUC=0.654 (95% CI 0.636 to 0.666).

Conclusion(s) Contemporary significant predictors of contraceptive use among women and men were reported, thereby enabling key Ugandan subpopulations who would benefit from more targeted family planning initiatives to be identified. However, the acceptable AUC for women and modest AUC for men suggest that other important unmeasured predictors may exist. Nonetheless, these evidence-based findings remain important for informing future programmatic and policy directions for family planning in Uganda.

Strengths and limitations of this study

- This is the first study of predictors of modern contraception among women and men using nationally representative data from the latest 2016 Uganda Demographic and Health Surveys, and therefore provides an updated, accurate reflection of current contraceptive use in Uganda.
- The study considers a group of demographic and proximate predictor variables and provides a series of models that adjust for confounding and potential mediator effects between the variables, to arrive at a final parsimonious predictive model.
- The study provides a quantitative analysis of men's contraceptive use and predictors of men's contraceptive behaviour in Uganda, which has been a largely understudied area in the past.
- The receiver operating characteristic curve yielded less than adequate predictive power in the final model for men, which suggests that there may be important unmeasured factors omitted from the model.
- The study relied on secondary data for which psychometric properties of the tools were not readily available, and while response rates were good, respondents who did not participate are likely to have lower contraceptive use and poorer health-seeking behaviours than those who did participate.

INTRODUCTION

Contraceptive use is a key facet of sexual and reproductive health, and is crucial to averting maternal deaths that result from high-risk and/or unintended pregnancies and unsafe abortions.[1] Uganda has seen improvements in the use and provision of contraceptive services over the last decade[2]; however, unmet need among women (those who are sexually active and want to avoid, space or limit a pregnancy, but who are not using a modern contraception method) remains high—estimated at 28% of all married women and 32% of sexually active unmarried women of reproductive age in 2016.[3] Uganda has one of the highest maternal mortality rates in the East African region, at 343 maternal deaths per 100 000 live births in 2015,[4] yet one of the lowest contraceptive use prevalence rates

within this region.[5] Among postpartum women (those within 2 years of their last birth), only 25% currently used contraception, with 41% seeking longer spacing between births and 27% wishing to limit the number of births.[6] These figures underscore the high maternal health burden faced by Ugandan women of reproductive age.[2]

Previous studies have explored different factors and barriers that contribute to unmet need; some of the recurring themes include misconceptions and myths about contraception, poor management of side effects, partner opposition, societal and gender norms, and issues around service provision.[7–9] Higher educational levels and socioeconomic status among women, as well as older age, higher parity and urban place of residence have shown associations with higher rates of contraceptive use.[10–12] For men, a lack of knowledge, fear of their partners experiencing side effects and dissatisfaction with male contraceptive methods have been barriers to their involvement in reproductive health.[13–15] Furthermore, while men's participation in the family planning process has been recognised as being critical to its effectiveness, traditional gender norms and perceptions dictate that pregnancy, family planning and reproductive health are a woman's 'business', and thereby exclude men's involvement in the process.[7 16 17] Unequal and male-dominated power relations between men and women in Uganda's largely patriarchal society are also often mentioned as being critical to women's contraceptive decision-making and use.[18 19]

The Ugandan government recognises that family planning is central to its economic development; the Ministry of Health's most recent initiative, the Uganda Family Planning Costed Implementation Plan 2015–2020, has the national goals 'to reduce unmet need for family planning to 10% and to increase the modern contraceptive prevalence rate to 50% by 2020'.[20] Given that contraceptive use has significantly changed over time in Uganda,[2] and recognising that factors and barriers associated with contraceptive use are dynamic and complex, a thorough contemporary understanding of the determinants of women and men's contraceptive behaviour is essential to address the current unmet need for contraception. Furthermore, male contraceptive behaviour has been a largely understudied area in the past, yet male involvement in family planning, both as clients and partners,[21] remains a key focus of reproductive health programme. Using the country's most recent Demographic and Health Surveys (DHS) 2016 dataset, this paper seeks to identify current predictors of contraceptive use among women and men in Uganda. The DHS is a nationally representative, cross-sectional population survey of women and men of reproductive age using a stratified, two-stage cluster design.[22] The study's findings provide an empirical evidence base that can be employed to inform and improve family planning programmes to more effectively meet the reproductive health needs of the Ugandan population.

MATERIALS AND METHODS

Study design

A nationally representative cross-sectional population survey.

Setting and participants

All Ugandan women aged 15–49 years who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to participate. In one-third of the sampled households, all Ugandan men aged 15–54 years, who met the same residence criteria as described for women, were also eligible.

Primary variable

'Modern contraceptive use' was derived from the existing DHS variable on current contraceptive use by method type, with responses dichotomised into no (not using a method, uses a traditional method, uses a folkloric method) and yes (uses a modern method). The existing DHS variable excluded women who were pregnant and both women and men who had never had sex. Modern methods referred to any of the following: female sterilisation, male sterilisation, oral contraceptive pills, the intrauterine contraceptive device, injectables, implants, male and/or female condoms, diaphragms, contraceptive foam and contraceptive jelly, and lactational amenorrhoea method, and other modern contraceptive methods (including cervical cap, contraceptive sponge and others). Traditional methods referred to periodic abstinence (rhythm/calendar method), or withdrawal. Folkloric methods referred to locally described methods and spiritual methods of unproven effectiveness, such as amulets and herbs. Women's and men's responses to modern contraceptive use included methods used by their partner, as well as methods requiring couple negotiation (condom use or abstinence).

Potential predictor variables

Age, education level, place of residence, region of residence, marital status, religion, parity, wealth index, hearing about family planning through the media and discussing family planning with a health worker were considered as being potential predictors of modern contraceptive use for women and men. For women, three additional variables were also available and included: if distance to the health facility was a problem; if getting money for treatment was a problem; and if getting permission to seek treatment was a problem. The definitions, original DHS categories and details about the groupings for each of these variables can be found in online supplementary appendix A, table A.1.

Data sources and measurement

The DHS are country-wide cross-sectional surveys commissioned by the United States Agency for International Development and periodically carried out by the governments of different countries, with operational support from ICF International. Datasets are available

through application to MEASURE DHS. The surveys use standardised questionnaires developed by MEASURE DHS specifically for women, men and households; these are administered during face-to-face interviews. Detailed methodological information can be found on the MEASURE DHS webpage (https://dhsprogram.com/data/), and DHS reports for respective countries.[23]

Statistical methods

Reporting of analyses were informed by the Strengthening the Reporting of Observational Studies in Epidemiology guidelines (www.strobe-statement.org).[24] Analyses were conducted separately on women's and men's datasets, using specialist statistical software Stata SE V.16.0 (StataCorp, College Station, Texas, USA), and accounting for the stratified two-stage cluster design and sample weightings. Unweighted sample numbers were reported, together with their associated weighted percentages. Initially, bivariable logistic regression models were employed for each potential predictor variable to assess their association with modern contraceptive use. All demographic variables were then considered together (model 1). Next, proximal variables were collectively added to provide insight into their potential confounding or moderating effects (model 2). Finally, parsimonious multivariable models were derived (model 3). In the spirit of Sun *et al*,[25] this was done by only considering variables yielding bivariable associations with $p \leq 0.30$ as potential candidates for model 3. Forward and backward stepwise selection approaches of these candidate variables were then separately undertaken to determine the final model, using $\alpha = 0.05$ to define significance and p values derived from adjusted Wald's type III tests. Both approaches were employed in an effort to triangulate the results, or reveal discrepancies between models. Spearman's correlation coefficients were used to identify potential multicollinearity issues between the considered predictor variables.

The ability of the variables to predict modern contraceptive use in the final women and men's models was determined by a 10-fold cross-validated area under (AUC) the receiver operating characteristic (ROC) curve. An ROC curve provides a standardised way of evaluating the ability of a continuous marker to predict a binary outcome, and plots the true positive rate (sensitivity) against a function of the false positive rate (1-specificity) at various levels of the marker. AUC is frequently employed as summary measure of a model's predictive accuracy.[26] Adopting the recommendations of Hosmer and Lemeshow, an AUC of 0.5 suggests no discrimination, 0.7–0.8 is considered acceptable, 0.8–0.9 is considered excellent and more than 0.9 is considered outstanding.[27] In k-fold cross validation, the dataset is randomly partitioned into k approximately equally sized subsamples (or folds). At each iteration, one fold is retained as the validation data for testing the model and estimating the AUC, while the remaining k−1 folds are used as training data for model estimation. This process is repeated k times, with each of the k folds used once as the validation data. The 'cvauroc' procedure in Stata was employed to derive and average these 10-fold AUCs, and estimate its associated 95% bias corrected CI.[28] K-fold cross validation avoids the optimistic estimates of predictive performance known to exist when the full dataset is used for both model specification and prediction assessment.

Ethical considerations

As a part of the DHS survey methodology and ethics process, informed consent is obtained from all participants prior to their participation in the survey, and the collection of information is done confidentially. Once a data request has been approved, no further ethical clearance is required for use of these data for research.

Patient and public involvement

This research was done without patient involvement. Patients were not invited to comment on the study design and were not consulted to develop patient relevant outcomes or interpret the results. Patients were not invited to contribute to the writing or editing of this document for readability or accuracy.

RESULTS

Demographic characteristics

A representative sample of 20 880 households was randomly selected for the 2016 Uganda DHS, with 19 088 eligible women and 5676 eligible men being identified. Interviews were completed with 18 506 (97.0%) women and 5336 men (94.0%). Their demographic profiles appear in table 1.

Contraceptive use among women and men—overall and bivariable relationships

Overall, 4914 (26.6%) women and 1897 (35.6%) men used a modern contraceptive method. In both the women's and men's bivariable analyses (tables 2 and 3), almost all predictor variables had notable OR effect sizes. For women, large effect sizes were seen for age, marital status and parity in particular. For men, large effect sizes were associated with education, wealth index, hearing about family planning through the media and discussing family planning with a healthcare worker.

Contraceptive use among women and men—multivariable findings

Table 2 includes the model 1, model 2 and model 3 logistic regression results for women. Compared with the bivariable results, in the demographic model (model 1), the effect size associated with parity remained large, level of education became more influential, but both age and marital status diminished. The effect sizes associated with parity and education remained largely unaltered when the proximate factors were introduced (model 2), as did the AORs for the remaining variables, suggesting negligible confounding/moderation effects in the demographic variable relationships caused by the introduced

Table 1 Distribution of demographic characteristics of participating Ugandan women (n=18506) and men in 2016 (n=5336)

	Women	Men
	N (%)*	N (%)*
Age (years)		
15–24	8058 (43.7)	2214 (41.9)
25–34	5614 (30.2)	1477 (27.7)
≥35	4834 (26.1)	1645 (30.4)
Highest educational level		
No education	2071 (9.6)	231 (4.2)
Primary	10893 (57.4)	3047 (55.3)
Secondary or higher	5542 (32.9)	2058 (40.6)
Marital status		
Unmarried	4738 (25.8)	2029 (39.0)
Married	11379 (60.7)	3012 (55.4)
S/D/W†	2389 (13.5)	295 (5.6)
Number of children		
0	4901 (26.7)	2163 (41.6)
1–3	7079 (38.9)	1363 (25.9)
≥4	6526 (35.5)	1810 (32.6)
Place of residence		
Urban	4379 (26.7)	1150 (24.9)
Rural	14127 (73.3)	4186 (75.1)
Wealth index		
Poor	7524 (35.9)	2104 (34.6)
Middle	3485 (18.7)	1049 (19.6)
Rich	7497 (45.4)	2183 (45.8)

*Weighted percentages account for the sampling weights and study design.
†Separated/divorced/widowed.

proximate variables. In developing the most parsimonious multivariable model (model 3), both forward and backward stepwise selection methods yielded the same combination of variables; see table 2. None of the significant or non-significant variables were strongly correlated with each other, so non-significance was unlikely due to multicollinearity (online supplementary table A.2). Figure 1 depicts the 10-fold ROC curves derived from the women's final multivariable model. The averaged cross-validated AUC=0.714 (95% CI 0.704 to 0.720), which represents acceptable predictive accuracy.

Table 3 gives the model 1, model 2 and model 3 logistic regression results for men. Compared with the estimated bivariate ORs, in the demographic model (model 1), the effect size associated with education and wealth index remained large, number of children became more influential, but both age and marital status diminished. The effect sizes associated with all variables remained largely unaltered when the proximate factors were introduced (model 2), suggesting negligible confounding/moderation effects in the demographic variable relationships caused by the introduced proximate variables. Both forward and backward stepwise selection for men also yielded identical parsimonious multivariable models (model 3). As before, there was little evidence of multicollinearity between candidate variables (online supplementary table A.3). Figure 1 also depicts the 10-fold ROC curves for men. Here, the averaged cross-validated AUC=0.655 (95% CI 0.636 to 0.666), which falls below the threshold considered as acceptable.

DISCUSSION

In 2016, 26.6% of Ugandan women were using modern contraception, an increase from 19.9% in 2011. This study highlights that significant predictors of contraceptive use among women and men included education, wealth index and the number of living children, with marital status, region of residence and distance to a healthcare facility being important for women, while hearing about family planning through the media and discussing family planning with a health worker being important for men.

Significant associations of individual factors such as education, parity and marital status, and socioeconomic factors such as wealth index, with modern contraceptive use among women are consistent with previous studies in Uganda.[16 29] These factors remain important predictors of contraceptive use and confirm the importance of women's education and empowerment to increasing contraceptive uptake. Parity had the largest observed effect size for women across all models, underscoring its important association with contraceptive uptake. Previous work has shown that women who have several children are more likely to use contraception to limit their number of subsequent pregnancies.[11] Non-significant factors included family planning awareness through media or discussions with a health worker, religion and getting money, and/or permission for treatment. The non-significance of these variables may imply that levels of family planning knowledge are already high among women, and issues such as contraceptive method costs are not significant in determining women's contraceptive uptake. Such changes could reflect a culmination of programme and policy successes over the last two decades, particularly in increasing knowledge about family planning, and removing the barriers of cost. Though religion has been acknowledged as a key determinant of contraceptive use in Uganda, particularly when faiths have an anticontraception stance,[19] the non-significant AORs for religion across all models may be indicative of women finding ways to subvert such religious precepts in order to manage the size and well-being of their families.

For women, the odds of modern contraceptive use were lower if distance to the nearest facility was reported as a problem. The importance of geography in accessing health clinics is often a challenge for Uganda's largely rural population due to large distances and logistical difficulties.[11 30] Community health workers, village health

Table 2 Distribution of Ugandan women's modern contraceptive use across considered potential predictor variables, together with ORs and 95% CIs for bivariable analyses, and adjusted ORs (AORs) and 95% CIs from a multivariable model containing demographic variables (model 1), a model containing demographic and proximate variables (model 2) and a parsimonious multivariable model (model 3)

			Bivariable model		Model 1		Model 2		Model 3	
	N	n (%)*	OR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value
Age (years)				<0.001		<0.001		<0.001		<0.001
15–24	8058	1433 (18.3)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
25–34	5614	2007 (37.1)	2.62 (2.39 to 2.90)		1.08 (0.96 to 1.22)		1.08 (0.95 to 1.22)		1.09 (0.97 to 1.23)	
≥35	4834	1474 (31.0)	2.00 (1.81 to 2.22)		0.78 (0.67 to 0.90)		0.76 (0.66 to 0.89)		0.78 (0.68 to 0.91)	
Highest educational attainment				<0.001		<0.001		<0.001		0.001
None	2071	378 (20.6)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
Primary	10893	2871 (26.6)	1.39 (1.19 to 1.63)		1.71 (1.46 to 2.00)		1.70 (1.45 to 2.00)		1.71 (1.46 to 2.01)	
Higher	5542	1665 (30.5)	1.69 (1.44 to 1.99)		2.28 (1.92 to 2.73)		2.25 (1.87 to 2.69)		2.30 (1.92 to 2.73)	
Place of residence				<0.001		0.12		0.19		
Urban	4379	1297 (30.5)	1 (reference)		1 (reference)		1 (reference)			
Rural	14127	3617 (26.1)	0.81 (0.72 to 0.90)		0.90 (0.80 to 1.02)		0.92 (0.82 to 1.04)			
Region				<0.001		0.002		0.01		0.003
Central	4325	1332 (31.2)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
East	5039	1355 (27.1)	0.82 (0.72 to 0.93)		0.91 (0.79 to 1.05)		0.92 (0.80 to 1.06)		0.90 (0.78 to 1.03)	
North	4368	869 (20.5)	0.57 (0.49 to 0.66)		0.74 (0.63 to 0.87)		0.77 (0.65 to 0.90)		0.74 (0.64 to 0.87)	
West	4774	1358 (28.1)	0.86 (0.75 to 0.99)		0.93 (0.81 to 1.08)		0.94 (0.82 to 1.08)		0.93 (0.81 to 1.07)	
Marital status				<0.001		<0.001		<0.001		<0.001
Unmarried	4738	491 (10.7)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
Married	11379	3841 (34.8)	4.46 (3.91 to 5.09)		1.36 (1.16 to 1.59)		1.37 (1.16 to 1.61)		1.35 (1.15 to 1.58)	
S/D/W†	2389	582 (25.5)	2.87 (2.47 to 3.32)		0.87 (0.72 to 1.04)		0.88 (0.73 to 1.06)		0.87 (0.73 to 1.04)	
Religion				0.13		0.25		0.23		
Other Christian‡	8585	2357 (27.9)	1 (reference)		1 (reference)		1 (reference)			
Catholic	7552	1916 (26.4)	0.93 (0.84 to 1.02)		0.99 (0.90 to 1.09)		0.99 (0.90 to 1.08)			
Muslim	2166	595 (28.3)	1.02 (0.87 to 1.19)		0.91 (0.77 to 1.08)		0.90 (0.76 to 1.07)			
Other	203	46 (22.1)	0.73 (0.50 to 1.08)		0.72 (0.51 to 1.02)		0.73 (0.51 to 1.03)			
No of children				<0.001		<0.001		<0.001		<0.001
0	4901	343 (7.2)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
1–3	7079	2280 (33.4)	6.47 (5.57 to 7.51)		6.01 (4.98 to 7.24)		6.14 (5.09 to 7.41)		6.01 (4.99 to 7.23)	
≥4	6526	2291 (36.0)	7.25 (6.20 to 8.48)		9.06 (7.29 to 11.25)		9.41 (7.57 to 11.70)		9.06 (7.31 to 11.22)	
Wealth Index				<0.001		<0.001		<0.001		<0.001

Continued

Table 2 Continued

	N	n (%)*	Bivariable model		Model 1		Model 2		Model 3	
			OR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value
Poor	7524	1623 (22.7)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
Middle	3485	978 (28.2)	1.37 (1.21 to 1.54)		1.32 (1.16 to 1.50)		1.29 (1.14 to 1.47)		1.30 (1.14 to 1.48)	
Rich	7497	2313 (30.9)	1.56 (1.41 to 1.72)		1.46 (1.29 to 1.65)		1.41 (1.24 to 1.59)		1.46 (1.29 to 1.65)	
Heard about family planning through media				<0.001				0.05		
No	6004	1345 (23.3)	1 (reference)				1 (reference)			
Yes	12 502	3569 (29.1)	1.36 (1.24 to 1.49)				1.10 (1.00 to 1.21)			
Discussed family planning with a health worker				<0.001				0.18		
No	7591	2062 (28.2)	1 (reference)				1 (reference)			
Yes	5161	1551 (30.9)	1.14 (1.03 to 1.25)				0.94 (0.84 to 1.05)			
Unknown	5754	1301 (23.0)	0.76 (0.69 to 0.84)				1.05 (0.95 to 1.16)			
If distance to healthcare facility is a problem				<0.001				0.03		0.006
No	11 292	3122 (28.5)	1 (reference)				1 (reference)		1 (reference)	
Yes	7214	1792 (25.3)	0.85 (0.78 to 0.92)				0.89 (0.81 to 0.99)		0.88 (0.80 to 0.96)	
If getting money needed for treatment is a problem				<0.001				0.41		
No	9823	2759 (28.9)	1 (reference)				1 (reference)			
Yes	8683	2155 (25.3)	0.83 (0.77 to 0.90)				0.96 (0.88 to 1.05)			
If getting permission to seek treatment is a problem				0.01				0.59		
No	17 486	4674 (27.5)	1 (reference)				1 (reference)			
Yes	1020	240 (23.5)	0.81 (0.69 to 0.95)				1.05 (0.88 to 1.26)			

*Weighted percentages account for the sampling weights and study design.
†Separated/divorced/widowed.
‡Christians excluding Catholics.

Table 3 Distribution of Ugandan men's modern contraceptive use across considered potential predictor variables, together with ORs and 95% CIs for bivariable analyses, and AORs and 95% CIs from a multivariable model containing demographic variables (model 1), a model containing demographic and proximate variables (model 2) and a parsimonious multivariable model (model 3)

	N	N (%)*	Bivariable model		Model 1		Model 2		Model 3	
			OR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value
Age (years)				<0.001		0.42		0.45		
15–24	2214	674 (31.7)	1 (reference)		1 (reference)		1 (reference)			
25–34	1477	618 (40.2)	1.45 (1.23 to 1.70)		1.17 (0.92 to 1.49)		1.17 (0.92 to 1.48)			
≥35	1645	605 (37.7)	1.30 (1.10 to 1.54)		1.13 (0.84 to 1.52)		1.16 (0.87 to 1.56)			
Highest educational attainment				<0.001		<0.001		<0.001		<0.001
None	231	36 (18.2)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
Primary	3047	907 (30.0)	1.93 (1.27 to 2.92)		1.99 (1.31 to 3.03)		1.86 (1.22 to 2.82)		1.87 (1.23 to 2.85)	
Higher	2058	954 (45.7)	3.79 (2.50 to 5.76)		3.50 (2.28 to 5.40)		3.02 (1.95 to 4.66)		3.10 (2.01 to 4.78)	
Place of residence				<0.001		0.39		0.34		
Urban	1150	509 (44.0)	1 (reference)		1 (reference)		1 (reference)			
Rural	4186	1388 (33.2)	0.63 (0.54 to 0.74)		0.92 (0.76 to 1.11)		0.91 (0.75 to 1.10)			
Region				<0.001		0.15		0.05		0.03
Central	1258	538 (41.5)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
East	1450	468 (31.7)	0.65 (0.53 to 0.80)		0.80 (0.64 to 0.99)		0.78 (0.62 to 0.97)		0.76 (0.61 to 0.93)	
North	1249	409 (33.3)	0.70 (0.57 to 0.87)		0.97 (0.77 to 1.22)		0.99 (0.79 to 1.26)		0.97 (0.78 to 1.22)	
West	1379	482 (35.2)	0.77 (0.63 to 0.93)		0.93 (0.75 to 1.14)		0.91 (0.74 to 1.12)		0.89 (0.72 to 1.09)	
Marital status				0.04		0.02		0.01		0.01
Unmarried	2029	651 (33.3)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
Married	3012	1127 (37.2)	1.19 (1.02 to 1.38)		0.61 (0.42 to 0.88)		0.56 (0.38 to 0.82)		0.60 (0.42 to 0.85)	
S/D/W†	295	119 (40.1)	1.34 (0.99 to 1.80)		0.77 (0.50 to 1.18)		0.76 (0.49 to 1.16)		0.80 (0.53 to 1.21)	
Religion				0.19		0.42		0.51		
Other Christian‡	2413	890 (36.4)	1 (reference)		1 (reference)		1 (reference)			
Catholic	2201	760 (35.4)	0.96 (0.82 to 1.11)		0.97 (0.83 to 1.13)		0.97 (0.83 to 1.13)			
Muslim	644	237 (37.2)	1.03 (0.82 to 1.30)		0.95 (0.75 to 1.21)		0.97 (0.76 to 1.24)			
Other	78	10 (19.5)	0.42 (0.19 to 0.94)		0.52 (0.23 to 1.15)		0.55 (0.25 to 1.22)			
No of children				<0.001		<0.001		<0.001		<0.001
0	2163	654 (31.6)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
1–3	1363	564 (41.0)	1.50 (1.27 to 1.78)		2.12 (1.52 to 2.96)		2.03 (1.45 to 2.85)		2.14 (1.53 to 2.97)	
≥4	1810	679 (37.3)	1.29 (1.10 to 1.51)		2.13 (1.44 to 3.14)		1.99 (1.34 to 2.96)		2.15 (1.50 to 3.09)	
Wealth index				<0.001		<0.001		<0.001		<0.001

Continued

Table 3 Continued

	N	N (%)*	Bivariable model		Model 1		Model 2		Model 3	
			OR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value	AOR (95% CI)	P value
Poor	2104	601 (28.3)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
Middle	1049	342 (32.2)	1.20 (0.99 to 1.46)		1.13 (0.92 to 1.37)		1.10 (0.90 to 1.34)		1.10 (0.90 to 1.34)	
Rich	2183	954 (43.2)	1.93 (1.66 to 2.23)		1.44 (1.21 to 1.72)		1.39 (1.16 to 1.66)		1.44 (1.22 to 1.70)	
Heard about family planning through media				<0.001				<0.001		<0.001
No	1446	359 (25.7)	1 (reference)		1 (reference)		1 (reference)		1 (reference)	
Yes	3860	1538 (39.4)	1.88 (1.60 to 2.21)				1.48 (1.24 to 1.76)		1.48 (1.25 to 1.77)	
Discussed family planning with a health worker				<0.001				0.001		<0.001
No	4658	1567 (34.2)	1 (reference)				1 (reference)		1 (reference)	
Yes	678	330 (48.4)	1.81 (1.50 to 2.17)				1.51 (1.22 to 1.86)		1.50 (1.22 to 1.85)	

*Weighted percentages account for the sampling weights and study design.
†Separated/divorced/widowed.
‡Christians excluding Catholics.

teams and mobile outreach clinics are often the critical first touchpoint in these settings, providing services such as family planning counselling and at times, short-term contraceptive methods.[31] These urban–rural disparities are also recognised in Uganda's Family Planning Costed Implementation Plan 2015–2020, and the sustained continuation of these efforts is crucial to ensuring that these communities are reached and their contraceptive needs are met.

Only one previous study, by Kabagenyi *et al*, has looked at individual-level factors associated specifically with men's contraceptive use in Uganda, based on DHS data from 2011.[32] Our study indicates that education, marital status, number of children and wealth index are significantly associated with male contraceptive use. Higher education also had the observed largest effect size across all models, which is suggestive of the importance of men's education in informing their contraceptive attitudes and behaviour. This novel evidence is valuable for the appropriate and effective targeting of family planning programmes and reproductive health messages, particularly given that increasing male involvement in contraceptive decisions, discussions and programme has long been a goal on the family planning agenda.[16] Furthermore, the increase in modern contraceptive use to 35.6% of Ugandan men in 2016 (from 25.2% in 2011) is encouraging, and may indicate a slow shift in attitudes and increased openness towards male participation in reproductive health.[17] Non-significant factors included place and region of residence, religion and age. For men, this may imply that contraceptive access is not constrained by geographical factors, and similar to women, religious beliefs are superseded by the practical challenges of supporting a large family. Furthermore, age may not be significant in contraceptive decisions as men's reproductive capacity tends to span over a longer period of time.

Awareness about family planning via the media or through discussions with a health worker was also associated with modern contraceptive use among men. Where media is concerned, this is in line with previous work that has shown television and radio to be effective for the dissemination of health messages,[33] and lends evidence to show that these are still relevant and appropriate channels for the distribution of health information. In interactions with health workers, women are often more likely than men to engage with a health worker due to visits to the health centre for her own or her children's health. Therefore, it is noteworthy that men who have interacted with a healthcare worker have higher odds for contraceptive use, as was also reported by Kabagenyi *et al*.[32] As family planning programmes have mainly focused on women in the past, this finding highlights an opportunity for increasing male involvement, particularly in integrated health programmes.[34]

There were notable differences in the ways specific predictor variables were associated with contraceptive use for women and men. For instance, education had a greater impact on men's contraceptive use compared

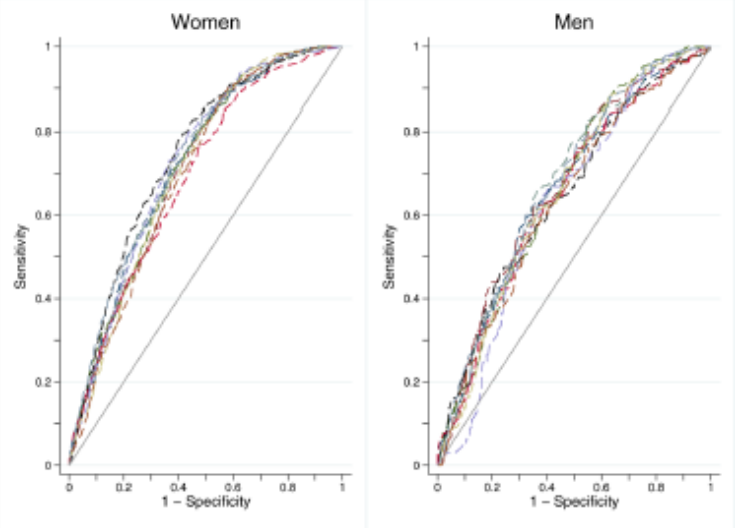

Figure 1 Tenfold cross-validation receiver operating characteristic curves for Ugandan women and men derived from the final parsimonious multivariable logistic regression models (model 3).

with women's, while parity had a more significant association with contraceptive use among women compared with men. These differences could reflect how gender roles and norms influence and motivate women's and men's contraceptive behaviour differently. For instance, the roles of childbearing and child rearing in Uganda are borne almost entirely by women,[35] and therefore women who have more children may be more motivated to use contraception to reduce the possible burden of future pregnancies. Yet for men, a large family and more children often equates to a higher status in the community,[19] and therefore their motivation to use contraception could be lower, even after several children.

The 2016 DHS sample size for women and men has been the biggest yet in Uganda, and hence the findings of this study point to key target groups and demographic factors to be considered for family planning initiatives moving forward. Important subpopulations, such as those less educated, of lower socioeconomic status and those who reside in areas outside the Central region, may still find modern contraceptive uptake and access to be a challenge. Though the goals of Uganda's Family Planning Costed Implementation Plan are formulated at a national level, these findings could inform health policy decision-makers about population groups at high risk of not using contraception, in an effort to streamline future family planning programmes and reproductive health strategies towards meeting the needs of these groups. Ultimately, it is hoped that these findings will aid in improving overall rates of contraceptive uptake among women and men, and thereby reduce the risk of unintended pregnancies, unsafe abortions and the unacceptably high maternal health burden among Ugandan women.

Strengths and limitations

This population-level study of women and men's use of modern contraception in Uganda is based on the most recently available, nationally representative data from 2016, and therefore is the most updated and accurate reflection of current contraceptive use in the country. The utilisation of a large, country-level dataset based on systematic survey methodology, together with high participant response rates, lends robustness to the results. Furthermore, the study provides a quantitative analysis of men's contraceptive use and predictors of men's contraceptive behaviour in Uganda, which has been a largely understudied area in the past. Predictor variables that were significantly associated with contraceptive use for women and men are also important in ascertaining subpopulations that would benefit from more focused efforts in terms of family planning service outreach and provision. Reaching these populations are particularly critical if the national goals of Uganda's Family Planning Costed Implementation Plan are to be achieved by 2020.

While the study has these notable strengths, it also has weaknesses. The ROC curves yielded less than adequate predictive power in the final model for men, which suggests that there may be important unmeasured factors omitted from the model, and that reliability of some self-reported variables may be relatively weak for men compared with women. Further work is recommended to examine other factors that have not been considered in this study, such as decision-making dynamics, partner characteristics, the desire for more children and the reliability of self-reporting among men. Data collected for all the variables were self-reported; hence, subject to recall bias and response bias, and the psychometric properties of the tools were not

readily available. As the study relied on secondary data analysis, it is constrained by the variables collected and their respective definitions. Lastly, while the DHS response rates were good, ranging from 94.0% to 97.0%, respondents who did not participate are likely to have lower contraceptive use likelihoods and poorer health-seeking behaviours than those who did participate.

CONCLUSION

The associations presented between modern contraceptive use and different predictor variables for women and men have substantial value in informing, tailoring and implementing future reproductive health strategies and initiatives. These results are geared towards providing a contemporary, robust evidence base, so that key population groups in need of contraceptive services can be targeted more effectively. Continued evaluation and reassessment of changes in contraceptive behaviour and uptake by way of large-scale national surveys are essential to ensuring the availability of up-to-date, empirical evidence for driving future family planning programme and policy directions, and ultimately reducing Uganda's maternal health burden.

Acknowledgements The authors are grateful to MEASURE DHS for timely assistance and access to the 2016 Uganda DHS dataset used within. They also wish to acknowledge the ground support from local researchers and community members in Iganga, Uganda, whose insight and wisdom into Ugandan culture and norms were invaluable.

Contributors Conceptualisation, methodology and formal analysis: AN and PJS. Data curation, project administration and writing—original draft: AN. Supervision: SL and PJS. Writing—review and editing: SL, SN and PJS.

Funding AN received a University of Canterbury Doctoral Scholarship.

Disclaimer This award had no role in the design and conduct of the study, management, analyses, interpretation of the results or in the preparation, review or approval of the manuscript.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available in a public, open access repository. This paper made use of third party data, and the authors neither collected nor own the data. The 2016 Uganda Demographic and Health Surveys (DHS) dataset is available through application for academic research, in the same manner as the authors, via MEASURE DHS (https://dhsprogram.com/data/). The authors have no special privileges that other investigators would not have, in this respect. Academic users wishing to use the data are asked to register on the website and complete a short web form via MEASURE DHS.

ORCID iDs
Amrita Namasivayam http://orcid.org/0000-0003-0768-9042
Philip J Schluter http://orcid.org/0000-0001-6799-6779

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APPENDIX M: PHOTOGRAPHS FROM FIELDWORK IN UGANDA

Figure 10.1. A community health worker conducts an educational workshop on contraceptive methods.

Figure 10.2. The main health provider (midwife) in a Level II Health centre in the Mayuge district.

Figure 10.3. Women waiting outside Level II Health centre for maternal health services on a Thursday morning.

Figure 10.4. Women in more rural areas often have to walk long distances to access their nearest healthcare facility.


Figure 10.5 (a). If a family is better-off financially, they may own a bicycle for transport purposes. (b) Family planning services are often provided on the same day as child health services to make these more convenient and accessible to women.

Figure 10.6 (a). Mobile outreach teams use tuk tuks to announce their outreach services in a community. (b) Family planning methods available as part of a mobile outreach service.

Figure 10.7. A community health worker provides family planning counselling as part of a health services outreach program by the District Health Services.

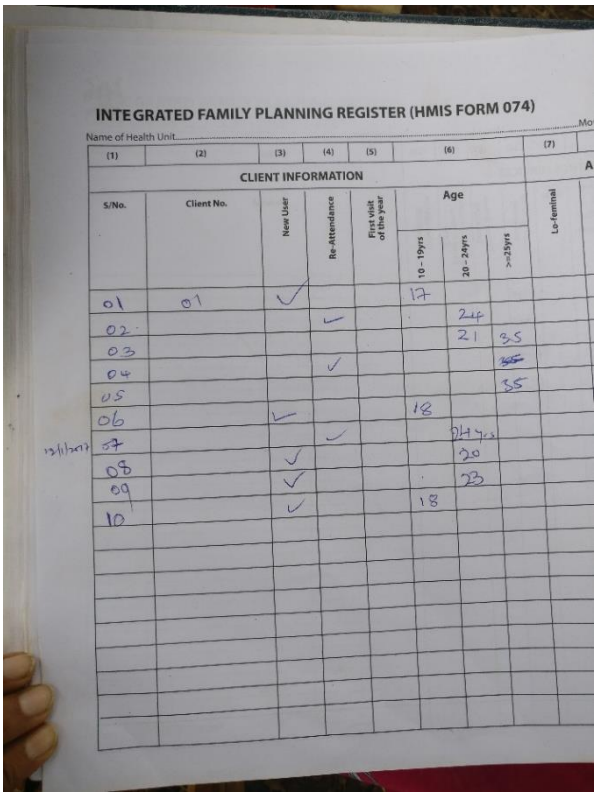


Figure 10.8 (a-b). Family planning methods and records used for community outreach events as well as routine service provision.

Figure 10.9 Signs for the availability and schedule of family planning services in clinics.

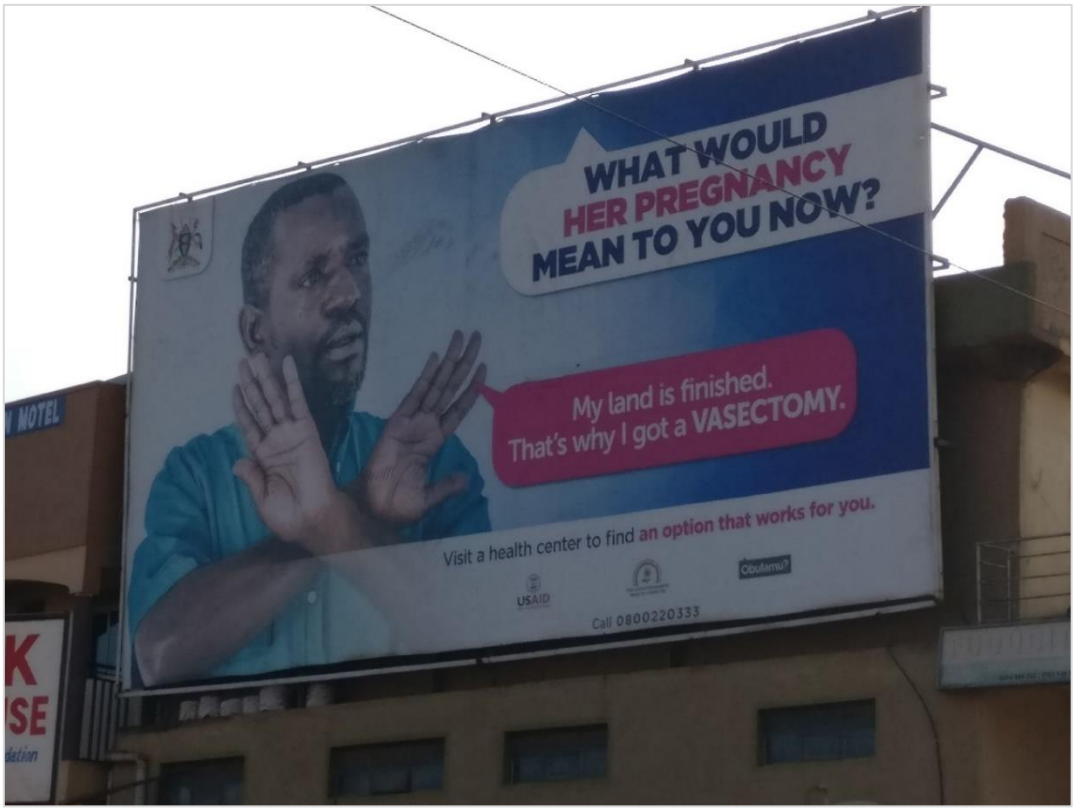


Figure 10.10 A billboard on a main highway in Uganda, advocating for the uptake of family planning services.

Figure 10.11 (a-b). Slogans outside Reproductive Health Uganda advocating for contraceptive use.

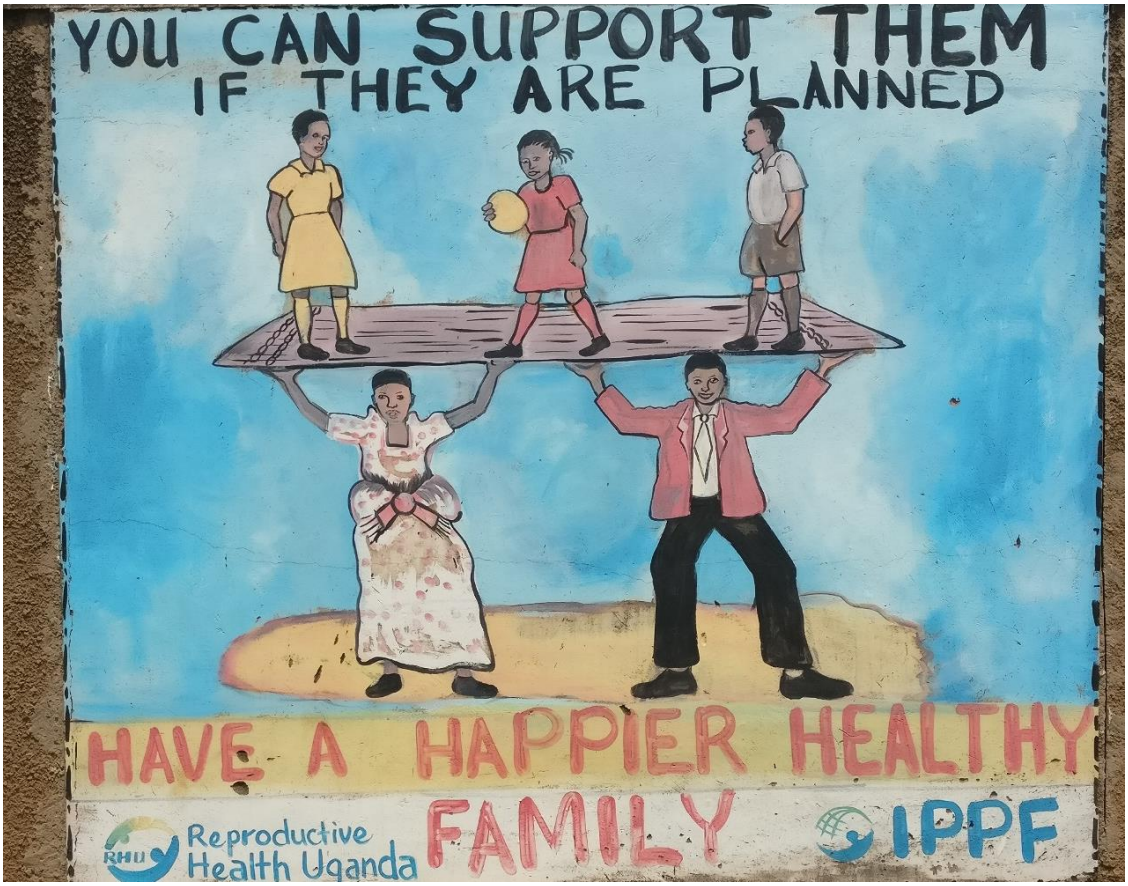
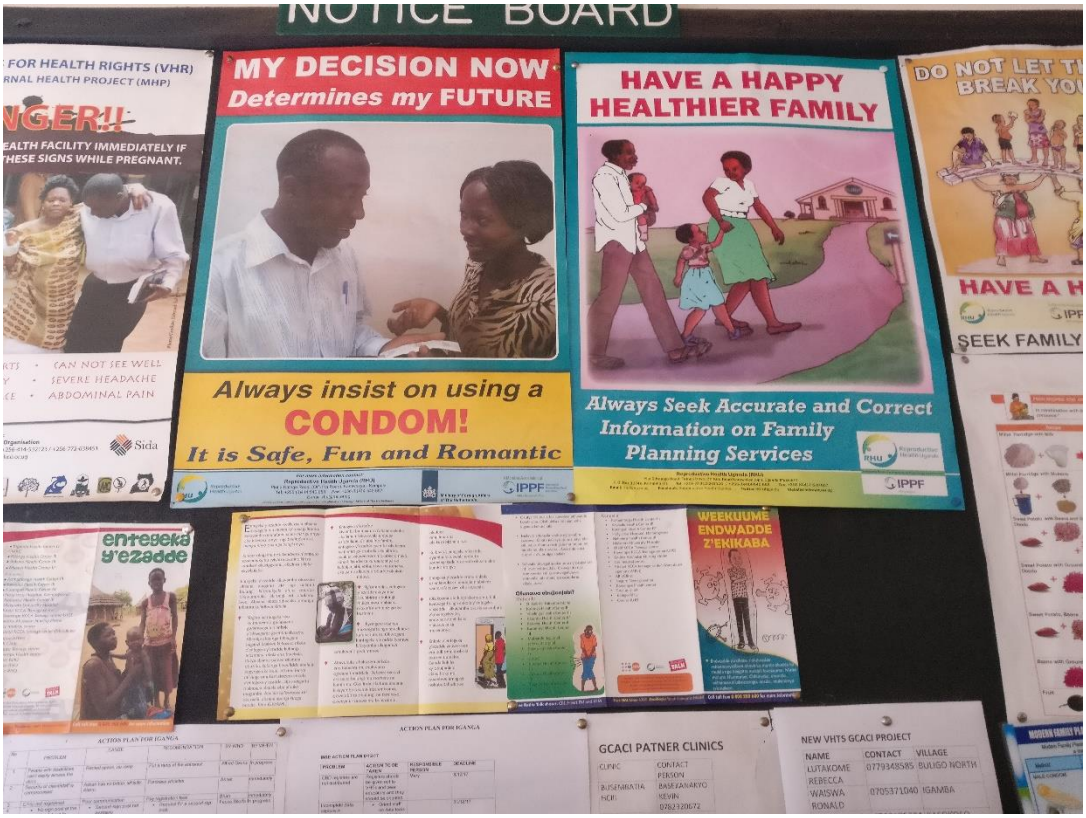
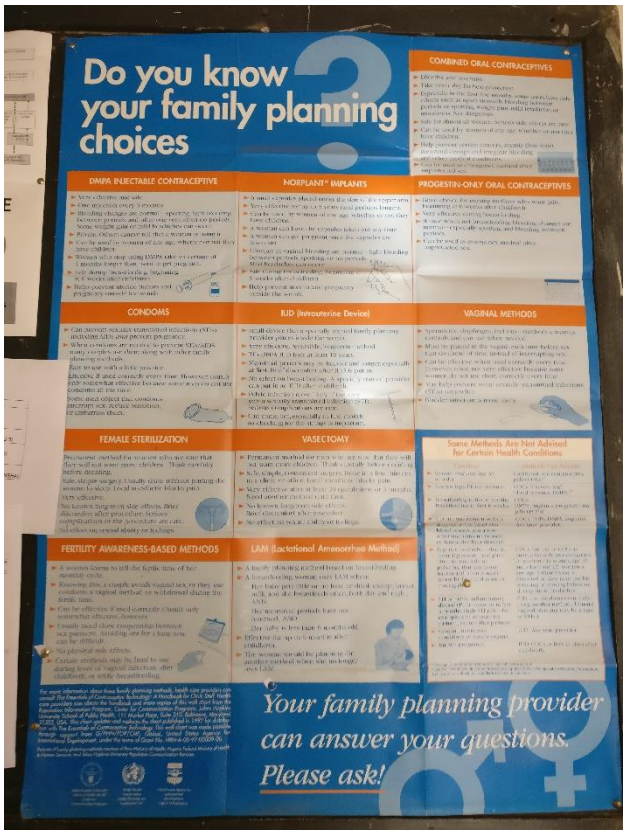
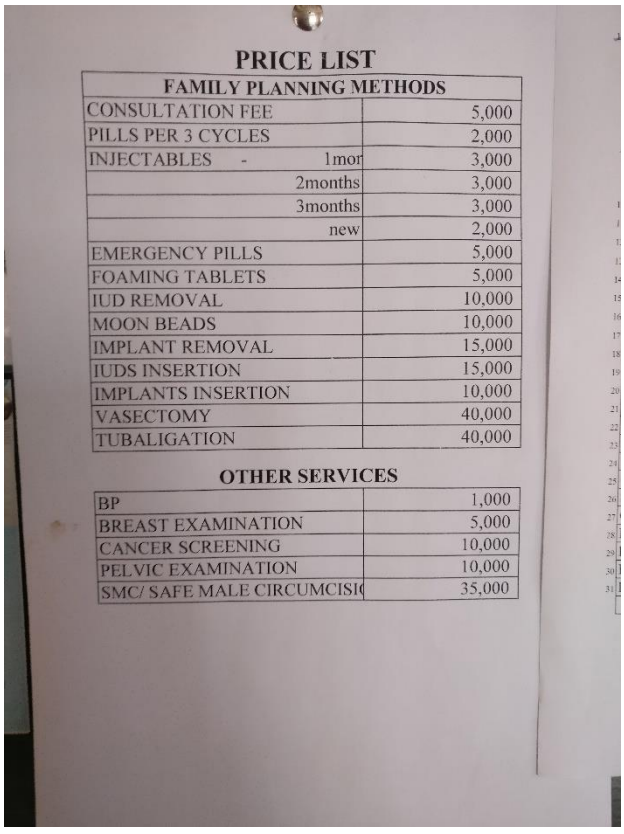


Figure 10.12 (a-b). Slogans outside Reproductive Health Uganda advocating for contraceptive use.







PRICE LIST

FAMILY PLANNING METHODS	
CONSULTATION FEE	5,000
PILLS PER 3 CYCLES	2,000
INJECTABLES - 1mor	3,000
2months	3,000
3months	3,000
new	2,000
EMERGENCY PILLS	5,000
FOAMING TABLETS	5,000
IUD REMOVAL	10,000
MOON BEADS	10,000
IMPLANT REMOVAL	15,000
IUDS INSERTION	15,000
IMPLANTS INSERTION	10,000
VASECTOMY	40,000
TUBALIGATION	40,000

OTHER SERVICES

BP	1,000
BREAST EXAMINATION	5,000
CANCER SCREENING	10,000
PELVIC EXAMINATION	10,000
SMC/ SAFE MALE CIRCUMCISI	35,000

Figure 10.13 (a-c). Information brochures and price list for family planning services available in a private maternal health clinic.